

7.0 Analysis of Long-Term Effects

The CEQA requires the discussion of the cumulative impacts, growth-inducing impacts, and long-term impacts of a proposed project. The following sections address these issues as they relate to implementation of the Orange County Great Park project.

7.1 CUMULATIVE IMPACTS

The CEQA Guidelines define cumulative effects as "two or more individual effects that, when considered together, are considerable or which compound or increase other environmental impacts." The CEQA Guidelines further state that the individual effects can be the various changes related to a single project or the changes involved in a number of other closely related past, present, and reasonable foreseeable probable future projects (Section 15355). The CEQA Guidelines allow for the use of two alternative methods to determine the scope of projects for the cumulative impact analysis:

- List Method - A list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the agency.
- Regional Growth Projections Method - A summary of projections contained in an adopted general plan or related planning document which is designed to evaluate regional or area wide conditions (Section 15130).

For the purpose of this Final Program EIR, the Regional Growth Projections Method has been utilized for analysis of cumulative impacts. The cumulative analysis is based on buildout assumptions identified in the Center for Demographic Research's *Orange County Projections 2000*.

Orange County Projections 2000

Cumulative impacts related to the proposed project will encompass environmental changes resulting from the combined effects of the proposed project and other existing or planned land uses in and around the project area. This cumulative analysis takes into consideration buildout of local and regional general plans as well as population forecasts for the County of Orange and the region as a whole (as shown in Table 7-1 and Figure 7-1).

Major projects included within the buildout assumptions and this cumulative analysis include: Eastern Transportation Corridor (ETC); Alton Parkway Extension; Foothill Transportation Corridor North (FTC); Saddleback Meadows; Foothill Aliso Commercial Center; Natural Community Conservation Plan (NCCP); MCAS Tustin Reuse Plan; James A. Musick Facility; Planning Area 17; Planning Area 27; Planning Area 40; Northern Sphere;

Woodbridge General Plan Amendment (Planning Area 15); and the Irvine Ranch Land Reserve.

**Table 7-1
Cumulative Regional Growth Projections**

Geographic Area*	2000			2025			% Change Population	% Change Housing	% Change Employment
	Population	Housing Units**	Employment	Population	Housing Units**	Employment			
RSA A	209,759	73,625	124,387	245,103	79,126	142,069	16.9%	7.5%	14.2%
RSA B	198,069	64,980	104,377	275,920	90,233	136,783	39.3%	38.9%	31.0%
RSA C	251,981	88,480	81,146	363,236	127,490	134,528	44.2%	44.1%	65.8%
RSA D	292,366	126,509	125,880	339,012	137,557	175,477	16.0%	8.7%	39.4%
RSA E	165,226	61,095	179,046	249,044	88,441	341,921	50.7%	44.8%	91.0%
RSA F	195,024	83,930	192,196	229,557	93,066	229,040	17.7%	10.9%	19.2%
RSA G	540,157	148,326	288,149	591,152	152,228	340,318	9.4%	2.6%	18.1%
RSA H	448,855	135,552	173,702	504,219	141,808	219,477	12.3%	4.6%	26.4%
RSA I	373,958	137,174	144,173	421,566	144,868	184,309	12.7%	5.6%	27.8%
RSA J	178,362	58,333	89,378	197,228	61,006	139,743	10.6%	4.6%	56.4%
Orange County	2,853,757	978,004	1,502,434	3,416,037	1,115,823	2,043,665	19.7%	14.1%	36.0%
SCAG Region***	16,827,152	5,376,096	7,413,135	22,625,384	7,415,911	9,947,153	34.5%	37.9%	34.2%

* RSA = Regional Statistical Area as defined by OCP 2000 - See Figure 7-1.

** OCP 2000 calculates housing units, while SCAG Projections calculate households.

*** SCAG region includes Orange, Los Angeles, San Bernardino, Riverside, Ventura and Imperial counties.

Since SCAG Projections for Orange County and OCP 2000 projections differ, totals may be different.

Source: *Orange County Projections 2000*. Prepared by California State University at Fullerton, Center for Demographic Research, June 22, 2000.

SCAG 2001 RTP Growth Forecast.

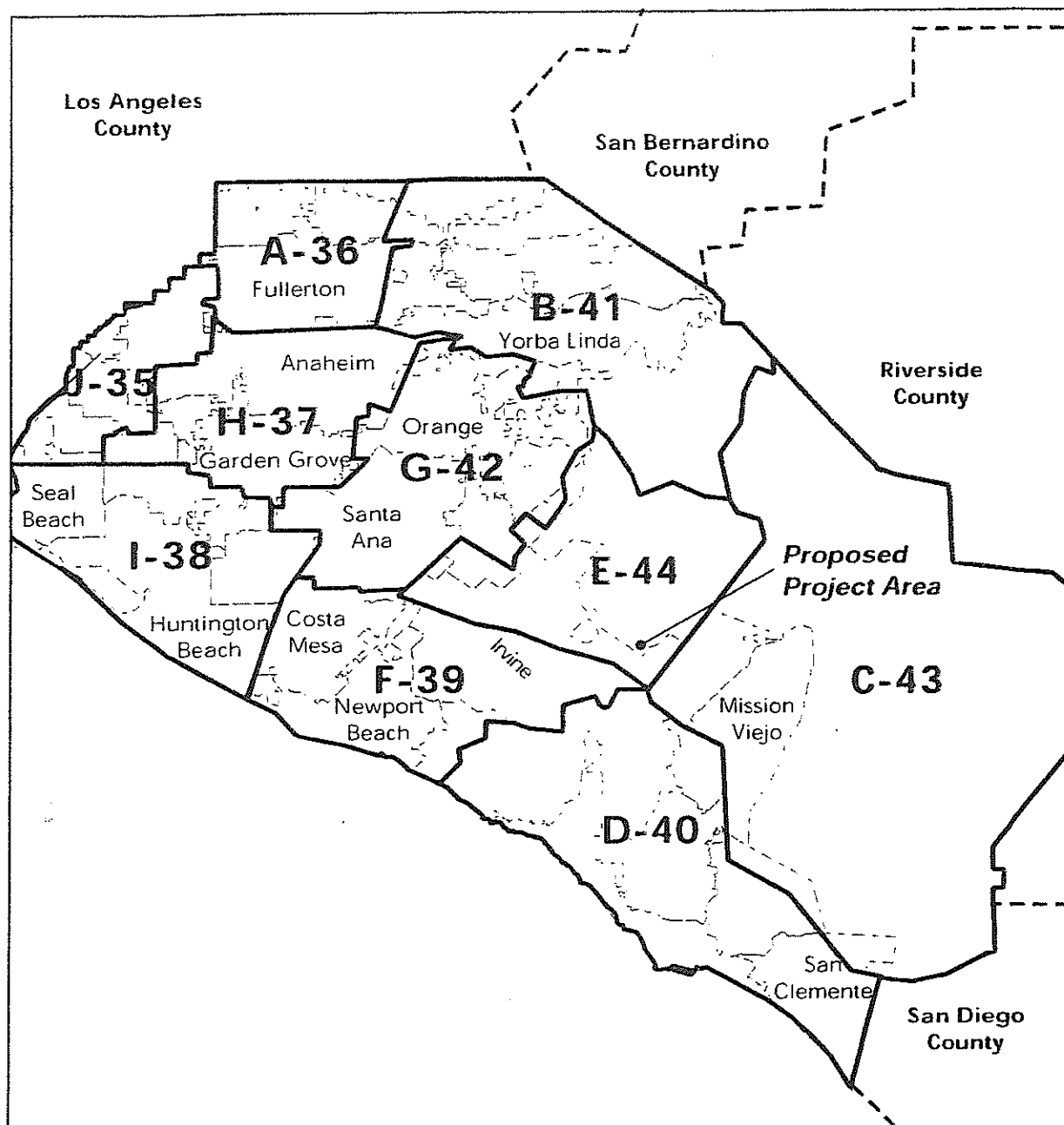


Figure 7-1
Orange County
Regional Statistical Areas

Cumulative Impact Analysis

Land Use

The geographic scope for land use includes Orange County as depicted on Figure 7-1, with a focus on projects occurring around the former MCAS El Toro. Development under the proposed project will occur according to the City of Irvine's Land Use Element. The proposed project is intended to result in beneficial land use impacts by providing non-aviation reuse of the former MCAS El Toro and implement a Great Park Plan. The proposed project designates the 974-acre Habitat Preserve to ensure that development within the project area is compatible with the established Orange County Natural Community Conservation Program (NCCP). Furthermore, the proposed project will not result in any land uses or circulation routes that might physically divide established communities either within the City or in other adjacent areas. Future development of cumulative projects will comply with the adopted land use standards, policies and ordinances, and will be compatible with land uses in the areas surrounding the project site. Development for related projects and areas surrounding the site will be governed by policies, implementation measures, and programs to ensure orderly urban development. This will ensure that no significant cumulative land use impact will occur. In addition, none of these projects would require the disruption or division of the physical arrangement of an existing community. As such, cumulative land use impacts are not considered significant.

Traffic

The geographic scope for traffic includes cumulative growth projections for Orange County including the projects described above. The 2025 and Post 2025 analyses contained in Section 5.2 - Transportation/Traffic assess the traffic impacts of all cumulative development anticipated by the Year 2025 and beyond. As shown in these analyses, all intersections and roadway/freeway/tollway/ramp segments will operate at acceptable levels of service with the existing or planned improvements. However, it has been assumed in the traffic analysis that the cumulative impact of project traffic along with other regional growth at the identified ramp and freeway locations will be mitigated through a combination of regional programs that are the responsibility of other agencies. If these programs are not implemented by the agencies with the responsibility to do so, the cumulative freeway/tollway ramp impacts would remain significant and unavoidable. As a result, the proposed project will result in a cumulatively significant traffic impact that may remain significant and unavoidable.

Air Quality

The geographic scope for air quality includes the South Coast Air Basin (SCAB) and the traffic study area defined in Section 5.2. The SCAB is depicted in Figure 5.3-1 in Section 5.3. In 2000, the annual maximum concentrations of ozone (O_3), carbon monoxide (CO), particulate matter (PM_{10}), and sulfates (SO_4) exceeded both Federal and State standards in some or all areas in the SCAB. However, standards for nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb) were not exceeded. A summary of measured criteria pollutant concentrations at the Saddleback air quality monitoring station (located at the former MCAS El Toro) for selected years between 1995 and 2000 are shown in Table 5.3-3 in Section 5.3.

NO₂ concentrations are not measured at this station; however, no station in Orange County has recorded an exceedance of NO₂ standards since at least 1990.

Although air quality tends to vary year to year due primarily to meteorological conditions, air quality at the Saddleback monitoring station appears to be improving (which generally has been the case throughout the SCAB). The primary long-term air quality impacts from development of the proposed project will result from operational emissions from area sources and motor vehicles. Projected SCAB emission estimates for the year 2025 and the estimated average mitigated operation emissions for the proposed project for the year 2025 are presented in the table below. From the estimates presented, it is evident that emissions from the project are less than one percent of the total projected SCAB emissions.

Projected Emission Estimates For SCAB From the 1997 AQMP Compared to Emission Estimates For the Project Area

Emission Estimates (tons/day)						
Pollutant	Projected 1997 AQMP Emissions		Base Plan (2025)		Overlay Plan (2025)	
	Year 2007*	Year 2025**	Unmitigated Emissions	Mitigated Emissions	Unmitigated Emissions	Mitigated Emissions
ROG	786	591	0.47	0.42	1.25	1.15
NO _x	714	419.5	0.40	0.35	0.70	0.60
CO	3,530	1,745	3.96	3.40	7.84	6.85
PM ₁₀	456	496	0.33	0.28	0.73	0.64

* 2007 Emission estimates are linearly extrapolated based on 2000 to 2006 emission trends in 1997 AQMP.

**2025 Emission estimates are linearly extrapolated based on 2000 to 2010 emission trends in 1997 AQMP.

Source: <http://www.aqmd.gov/aqmp/97aqmp/chapters/m-chap3>

Projected Emission Estimates for Base in the 1997 AQMP and Emission Estimates for the Proposed Project

Pollutant	Base Plan		Overlay Plan	
	Year 2007* (percent)	Year 2025** (percent)	Year 2007* (percent)	Year 2025** (percent)
ROG	0.05	0.07	0.15	0.19
NO _x	0.05	0.08	0.08	0.14
CO	0.10	0.20	0.19	0.39
PM ₁₀	0.06	0.06	0.14	0.13

* 2007 Emission estimates are linearly extrapolated based on 2000 to 2006 emission trends in 1997 AQMP.

**2025 Emission estimates are linearly extrapolated based on 2000 to 2010 emission trends in 1997 AQMP.

Source: <http://www.aqmd.gov/aqmp/97aqmp/chapters/m-chap3>

Emissions due to development in the proposed project will exceed SCAQMD thresholds of significance for oxides of nitrogen and reactive organic gases during construction (short-term impact) and for oxides of nitrogen, reactive organic gases, carbon monoxide, and

particulate matter less than ten microns in diameter (PM10) during operation from area source and vehicular emissions (long-term impact for both interim year and buildout year). Together, construction and operation emissions will also exceed applicable thresholds of significance. Although construction activities for the related projects may not overlap, the environmental analysis of this Final Program EIR assumes that they would. Operation emissions in conjunction with related projects and other emissions in the SCAB will also coincide. Since air quality in the SCAB does not comply with federal or state standards, these emissions will contribute to a cumulatively significant impact on air quality. Similar to project-specific impact, no feasible mitigation measures exist to reduce this cumulative impact to a level of less than significant because any project of substantial size will result in this impact.

The proposed project is not expected to result in other unmitigable air quality impacts, such as those related to carbon monoxide hotspots (see Section 5.3). Pursuant to the CEQA Guidelines (Section 15130), no other cumulative impact related to air quality will result.

Noise

The geographic scope for noise includes growth projections for Orange County and the traffic study area defined in Section 5.2. The proposed project will contribute to vehicular-generated noise along roadways in the vicinity of the site. All future cumulative projects, including the proposed project, must take future noise levels into account when siting sensitive receptors and include appropriate mitigation for on- and off-site impacts. Existing ordinances and regulations will ensure that project-specific on- and off-site impacts will be less-than-significant.

Noise generated from activities on the proposed project site will contribute to ambient noise in the surrounding area. However, since noise energy dissipates with distance, the extent of increases in noise will be limited to areas near the site. As discussed in Section 5.4, no impact related to on- and off-site noise generation has been identified. No other noise-related impacts, such as for groundborne vibration, are identified herein. Therefore, pursuant to the CEQA Guidelines (Section 15130), no significant cumulative impact related to noise will result.

Public Health and Safety

The geographic scope for public health and safety includes growth projections for Orange County with an emphasis on the area immediately surrounding the former MCAS El Toro. As discussed in Section 5.5, structures on the project site and portions of the project site are contaminated with hazardous materials by past military activities, such as asbestos and lead-based paint. Other hazards exist on the site, such as hazardous material deposits. Although the DON is required to remediate on-site hazardous materials and other hazards prior to conveyance, the proposed project will facilitate this cleanup, resulting in a beneficial impact. Future cumulative development that utilizes hazardous materials will be required to comply with all regulations pertaining to handling, storing, and disposing hazardous materials. The development of other cumulative projects has the potential to expose persons to hazards or hazardous materials; however, as with the proposed project, mitigation measures can be implemented to address the presence of hazards and hazardous materials on a site specific basis. The combined effect of the development and operation of cumulative projects is not cumulatively significant, as potential hazards are limited to each specific site, and each

project will need to comply with City, State, and federal regulations and policies adopted to protect the public from hazards, which will ensure that the cumulative public health and safety impact remains at a level less than significant.

Geology and Seismicity

The geographic scope for geology and seismicity includes growth projections for Orange County within the framework of the regional geologic setting. Regional geology is depicted on Figure 5.6-1. Most of the soils on the site are well-suited for urban development, including construction. All on-site impacts related to soils, such as erosion, loss of topsoil and expansive soils, must be mitigated prior to development pursuant to the City's General Plan and implementing zoning ordinance.

The level of seismic activity expected in the project area will be similar to the County as well as other regions of Southern California. The exposure of people or structures to risk of loss, injury, or death will not be substantial or adverse because potential for seismic activity is similar to elsewhere in the region. All development at the former MCAS El Toro and new development in the region in general will be required to be constructed to withstand probable seismic forces, including seismic-related ground failure like liquefaction. As cumulative projects are constructed, more people and structures will be exposed to seismic hazards due to earthquakes. Other geotechnical constraints, such as expansive soils and landslides may present hazards to cumulative development. Adherence to site specific geotechnical recommendations, building codes, and applicable grading ordinances will reduce potential cumulative geotechnical impacts to a level less than significant.

Hydrology and Water Quality

The geographic scope for hydrology and water quality includes growth projections for Orange County within the context of the Santa Ana River watershed (including the San Diego Creek watershed) and the Orange County aquifer. The proposed project will result in changes to on-site land uses. Although in some areas the amount of impervious surfaces will increase, a portion of the open space provided by the Orange County Great Park Plan will be utilized for drainage facilities that would offset this increase. All on-site development will be required to analyze on-site runoff to ensure that adequate infrastructure is provided to convey that runoff to local and regional facilities. The existing Flood Control Master Plan for San Diego Creek (Master Plan) assumed certain cumulative development, including urban reuse of the former MCAS El Toro. As projects are proposed within the watershed that do not conform to the growth and land use assumptions contained in the Master Plan, detailed hydrology studies will be required to analyze additional flood control improvement that will be required for that development to proceed. The provision of drainage corridors as a component of the project as well as mitigation measures contained in this Final Program EIR will ensure that project-specific impact will be less than significant. The cumulative impact on drainage and flood control facilities within the Santa Ana River watershed and Orange County aquifer will be less than significant.

The proposed project and cumulative development will be required to comply with all local and regional plans regulating water quality, including total maximum daily loads (TMDLs) for the Newport Bay watershed, the Drainage Area Master Plan (DAMP) for Orange County, NPDES permits, and implementing ordinances adopted by the City of Irvine. Project-related water quality impacts will not differ substantially from current conditions as existing channels

are all improved/channelized and are proposed to remain the same under the Orange County Great Park Plan. Sediment loads currently carried by these channels may decrease in the future due to recently installed detention basins in Bee Canyon, Round Canyon, and the Marshburn Basin. Additionally, to improve water quality within the San Diego Creek watershed, natural drainage corridors will be included in the Great Park Plan. In addition, the Irvine Ranch Water District (IRWD) is proposing to develop water quality wetlands within the project area. The wetlands are planned to be located along the Bee Canyon Channel, Aqua Chinon Channel, Serrano Creek, and the Upper San Diego Creek. Since existing regulatory programs exist to improve local surface water quality, project-specific impacts will be less than significant. Regional BMPs such as the TMDL programs, the DAMP, the MSW Permit, the regional sediment basins, and the San Joaquin Marsh program have been designed under the assumption that the San Diego Creek watershed would continue to become more urbanized. The regional control measures anticipate a reduction in overall agricultural land uses, with their high levels of pollutant runoff, and an increase in urban uses, with an associated increase in runoff volumes. The regional control measures would absorb any cumulative adverse effects of the proposed development. To the extent that the project would improve water quality, that benefit would be shared by the watershed.

The TMDL program is designed to identify all those constituents that adversely impact the beneficial uses of a particular water body, and then to identify the appropriate reduction in pollutant concentrations and/or loadings needed so that the water body can attain its beneficial uses as identified in the Basin Plan.

Other projects in the area would be expected to be reviewed by local and regional jurisdictions regarding project approvals; therefore, they would presumably comply with the same regulatory surface water quality requirements as the proposed project. Compliance with these regulations would ensure the cumulative impact remains less than significant.

Agricultural Resources

The geographic scope for agricultural resources includes Orange County and the growth expected within the County. The encroachment of urban areas on agricultural lands is a long and continued trend in Orange County. Though it is difficult to quantify the amount of agricultural land that is under development pressure within the County, it is evident that such pressure exists and will continue to with or without implementation of the project. The rising cost of irrigation, increased land values, labor costs, and damage from vandalism have made it difficult to maintain a successful large scale agricultural operation. The conversion of agricultural land to urban uses is an important policy decision that is ultimately left to each jurisdiction. In order to address the cumulative loss of agricultural land within Irvine, the City has established an Agricultural Legacy Program, which intends to retain certain sites within Irvine for metro farming activities. Despite the fact that the project will help implement the City's Agricultural Legacy Program by retaining agricultural uses on-site, the loss of the remaining agricultural land is a cumulatively significant loss of local and regional agriculture. The project will result in a cumulatively significant and unavoidable impact associated with the loss of agriculture. For a discussion of regional mitigation measures considered to mitigate project impacts but determined to be infeasible, please see Section 5.8 - Agricultural Resources of this Final Program EIR.

Biological Resources

The geographic scope for biological resources includes the Natural Community Conservation Plan (NCCP) Planning Area in conjunction with growth projections for Orange County. The City of Irvine and jurisdictions within the NCCP Planning Area will continue to develop in accordance with the adopted General Plans of the respective jurisdictions. The primary cumulative impact on biological resources is the fragmentation of ecosystems resulting from the incremental loss of native habitats. As fragmentation continues, the remaining ecosystems will become more isolates and fragmented. The result will be that connectivity between patches of habitat and the wildlife populations they support will be lost. The proposed project designates the 974-acre Habitat Preserve to ensure that development within the project area is compatible with the established Orange County Natural Community Conservation Program (NCCP). Furthermore, the project proposes a major wildlife corridor that would connect two preservation areas in the County, the Lomas Ridge and San Joaquin Hills. This wildlife corridor is proposed where there is currently no link between these areas.

The establishment of the Nature Reserve of Orange County, a 37,000 acre reserve that was approved on July 17, 1996, will provide regional biological benefits that would be unlikely to occur with a piecemeal conservation strategy. The Nature Reserve was designed to prevent the incremental loss of native habitat and the fragmentation of ecosystems, as well as to compensate for impacts of individual projects. Establishment of the Reserve System will protect approximately forty Identified Species, including three Target Species (gnatcatcher, Cactus wren, and orange-throated whiptail lizard), which are the focus of the NCCP planning, and use the CSS and related habitat. The implementation of the NCCP, dedication of lands, and endowment by the participating landowners mitigate impacts of proposed and future development on covered habitats and identified species. The City of Irvine participates in this and the NCCP program, and requires development to be in accordance with the NCCP. As a result, cumulative biological impacts are mitigated to a level less than significant.

Paleontological Resources

The geographic scope for paleontological resources includes growth projections for Orange County with a focus on the immediate area surrounding the former MCAS El Toro. Implementation of the City's standard conditions of approval, which includes requirements to ensure that paleontological resources are not impacted from development, and mitigation required by this Final Program EIR will ensure that impacts to paleontological resources in the project area are mitigated. This mitigation includes requirements for certification of the site by a registered paleontologist prior to issuance of grading permits and measures to recover fossils if they are discovered during grading. Such procedures are generally standard in the region, and will be applied elsewhere when appropriate. Implementation of these measures as specific cumulative projects are proposed and developed will ensure the potential cumulative impact to paleontological resources is less than significant.

Cultural Resources

The geographic scope for cultural resources includes growth projections for Orange County with a focus on the immediate area surrounding the former MCAS El Toro. Implementation of mitigation measures identified in Section 5.11 – Cultural Resources will reduce potential project impacts on cultural resources to less-than-significant levels. Although other projects in the region will result in significant impacts on cultural resources, existing structures at the former MCAS El Toro do not contribute to any substantial historic or cultural district in the region. There are no features or characteristics of the project area that define or include unique ethnic cultural values and no known or documented religious or sacred uses associated with the site or the region. Development of cumulative projects has the potential to impact archaeological resources. The cumulative impact to cultural resources can be mitigated through data recovery and avoidance of important cultural resources.

Aesthetics

The geographic scope for aesthetics includes growth projections for Orange County with a focus on the immediate area surrounding the former MCAS El Toro. The proposed project site is located in a rapidly urbanizing portion of southern Orange County where changes to the aesthetic environment abound. Specifically, new development in the area will alter the natural terrain and result in artificial topography. Alteration of the natural topography from the proposed project will be limited, and mitigation measures contained in this Final Program EIR (see Section 5.12 – Aesthetics) will ensure that project-level impacts as a result of this change will be less than significant. Existing City policies regarding visual quality, such as requiring site design review, will also work to ensure high aesthetic quality of future development. Substantial amounts of open space will be retained as well. The cumulative impact is considered less than significant.

Population and Housing

The geographic scope for population and housing includes Orange County and the growth projections for the County. Figure 7-1 depicts the Orange County Regional Statistical Areas. Other cumulative projects generally have been accounted for in these growth projections; however, future unknown development may also result in an exceedance of projections. Based on future projections, the Orange County Subregion is anticipated to become increasingly jobs-rich over the next 20 years. The proposed Base Plan and Overlay Plan for the former MCAS El Toro site would substantially add to employment generation characteristics of Irvine and the region. Since, the project-related employment would exacerbate the cumulative subregional jobs/housing imbalance, the cumulative population and housing impact is considered significant and unavoidable.

Public Services and Facilities

The geographic scope for public services and facilities includes growth projections for Orange County with a focus on the immediate area surrounding the former MCAS El Toro. Future regional growth will result in increased demand for public services and facilities, including law enforcement, fire protection and emergency medical services, park and recreational facilities and programs, and schools. Service providers will continue to evaluate levels of service desired and potential funding sources to meet this demand.

The proposed project will result in increased demand for public services and facilities and will contribute to the need to construct these facilities and operate such services. The Orange County Great Park Plan includes those facilities that will need to be constructed as a result of demand from on-site development. As such, the environmental impacts of constructing and operating these public facilities and services as a result of cumulative demand has been evaluated in this Final Program EIR, and no additional impact will occur.

Utilities

The geographic scope for utilities includes growth projections for Orange County with a focus on the immediate area surrounding the former MCAS El Toro. Future regional growth will result in increased demand for utilities, including water facilities and services, wastewater facilities and services, solid waste disposal, energy utilities, and communications. Utility providers will continue to evaluate levels of service desired and potential funding sources to meet this demand. Utility services are available for the proposed project and the proposed project includes general designs for utility systems.

The proposed project will result in increased demand for utilities and will contribute to the need to construct and operate these utilities. The Orange County Great Park Plan includes those utilities that will need to be constructed as a result of demand from on-site development. As such, the environmental impacts of constructing and operating utilities as a result of cumulative demand has been evaluated in this Final Program EIR, and no further impact will occur.

7.2 GROWTH INDUCING IMPACTS

Section 15126.2(d) of the CEQA Guidelines states that the EIR address the growth-inducing impact of the proposed project. Specifically, the EIR must "discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects that would remove obstacles to population growth....[i]ncreases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects." The EIR must also "discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment."

Impact Analysis

Growth-inducing impacts can be either direct or indirect, as described below.

Direct Impacts

Direct growth-inducing impacts are generally associated with the provision of urban services, such as utilities, improved roadways, and police protection, to an undeveloped or

5.2.2 Cumulative Impacts

■ Cumulative Impacts

CEQA requires that an EIR must discuss cumulative impacts to determine whether the cumulative impact is significant. If the cumulative impact is significant, the project's incremental effect must be analyzed to determine if the effects are cumulatively considerable. According to Section 15065(a)(3) and 15130 of the CEQA Guidelines, this determination is based on an assessment of the project's incremental effects viewed in connection with the effects of past projects, the effects of other current projects, and the effects of foreseeable future projects. The discussion of cumulative impacts must reflect the severity of the impacts and the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone. Further, the discussion is guided by the standards of practicality and reasonableness. According to Section 15355 of the CEQA Guidelines:

"Cumulative impacts" refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

- (a) The individual effects may be changes resulting from a single project or a number of separate projects.
- (b) The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

A significant cumulative impact does not necessarily mean that the project-related contribution to that impact is also significant. According to Section 15130(a):

An EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable, as defined in section 15065(a)(3). Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable..

The geographic scope of the cumulative impact analysis varies depending upon the specific environmental issue area being analyzed. In addition to describing the geographic scope of analysis, where appropriate, each section also designates the cumulative context within the designated geographic area. Finally, and where appropriate to the analysis in question, cumulative impacts are assessed with reference to a list of off-site "related projects," as described by CEQA Guidelines §15130(b).

A variety of off-site, related projects contribute to the cumulative context for the Proposed Project. The list of cumulative projects is provided by Tables 1-1 and 1-2 (List of Related Development Projects) and includes those projects that are (1) completed but not fully occupied, (2) currently under construction or beginning construction, (3) proposed with applications on file at the City, or (4) reasonably foreseeable.

■ Aesthetics

The regional context for a discussion of cumulative impacts to aesthetics and visual quality is the City of Lake Forest, as the City exists within an existing urban fabric of surrounding communities. The analysis includes all cumulative growth therein, as represented by implementation of the City of Lake Forest General Plan and the projects identified in Tables 1-1 and 1-2.

The General Plan would regulate any new development that occurs within the City. With respect to the Project Area, sweeping views of the Project Area are limited, and only exist from adjacent roadways and higher elevations in various locations near the specific sites. In particular, residents of the Portola Hills and Foothill Ranch communities have views of the expanse of open space that exists to the south of these developments, and travelers of SR-241 also have views of this open space. Because all proposed development is proposed adjacent to existing development, or development that would occur under the General Plan on other sites, the visual effect will be a seamless transition from existing to proposed uses. The Santa Ana Mountains may be viewed from numerous vantage points in the City, and cumulative development within the City and in other portions of the Project Area not part of the Proposed Project would not likely result in significant blockages of scenic views. Views from the Project Area of the Santa Ana Mountains to the north would not be significantly affected. Thus, the contribution of the Proposed Project to impacts associated with a substantial adverse effect on a scenic vista would not be considered considerable and would be a less-than-significant impact.

It is possible that certain views of scenic resources, including trees and rock outcroppings, could be affected by cumulative development on a site-by-site basis. It is anticipated that the protections afforded to natural scenic resources through the CEQA review process and local design review procedures will be applied, resulting in a less-than-significant cumulative impact. Further, the Project Area does not contain any specific scenic resources, other than views previously described. Therefore, the Proposed Project itself would have no contribution to this impact and the cumulative impact would be less than significant.

With respect to a substantial degradation of the visual character or quality of the area, cumulative development in the City will be guided by the General Plan and local design review procedures, which would continue to protect the visual character of the area. These processes would ensure the cumulative impact to the visual character or quality of the area would be less than significant. Moreover, the Proposed Project has been planned to provide a seamless transition between existing and proposed development. The Proposed Project will be implemented in a manner that complies with all relevant design guidelines and processes outlined in the Municipal Code such that it is consistent in height, scale, massing, and architectural elements and features to existing development. In addition, implementation of General Plan policies addresses design features, siting, and landform alteration. Thus, contribution of the Proposed Project to cumulative impacts would not be cumulatively considerable, and the Proposed Project would have a less-than-significant contribution to cumulative impacts.

Some of the City of Lake Forest is composed of single- and multi-family residential neighborhoods that could be sensitive to increases in light or glare. Consequently, growth representing full implementation of the applicable General Plan and related projects could result in the creation of new sources of light or glare that could affect day or nighttime views. Additional development could also increase daytime glare

due to an increase in the number of windows and use of certain types of building materials. Design controls would minimize these effects through lighting placement and direction. However, where development occurs in areas that do not contain substantial existing structures or lighting, the combined effect of related project development would result in changes to the ambient condition. This would result in a significant cumulative impact. Development under the Proposed Project would occur in areas that do not contain substantial existing structures or lighting, resulting in a cumulatively considerable contribution to this impact. The Proposed Project's contribution to cumulative impacts would be significant.

All cumulative development in the City of Lake Forest is subject to design guidelines and development guidelines of the General Plan, applicable Planned Community text, and the Municipal Code. As the Proposed Project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, or result in a design that is not permitted by applicable standards and design guidelines or Planned Community text, it would not contribute to any cumulative impact relative to any plan policies. No cumulative impact would result.

■ Agricultural Resources

The geographic context for the analysis of cumulative agricultural impacts is Orange County. Development of the Proposed Project, in combination with development in Orange County, would convert soils designated as Prime Farmlands, Unique Farmland, and Farmland of Statewide Importance to non-agricultural uses throughout the County. In addition, future development has the potential to convert lands currently used for active agricultural production within the County to nonagricultural uses.

As shown in Figure 3.2-1 and discussed previously, Orange County saw 4,609 acres of land—including 2,346 acres of important farmland—converted to urban uses between 2000-2002. In addition, a net total of 3,535 acres of agricultural land were reclassified to urban land by the FMMP. Further, 7,115 acres of “other” land—neither built-up nor used for agriculture, such as wetlands, low-density “ranchettes” or brush and timberlands unsuitable for grazing—were reclassified as urban. In addition, as described throughout Section 3.2 of the EIR, approximately 432 acres of prime and unique agricultural land in the City will eventually be developed. Therefore, this trend is likely to continue as development pressure throughout the City and County increases. The loss of this prime and unique farmland throughout the County is considered to be a significant cumulative impact. In particular, the conversion of 45 acres on the site of the present Nakase Nursery operations could place additional pressure on the remaining 86 acres on that site to convert to non-agricultural uses, since the nursery operation would be smaller after implementation of the Proposed Project. This could result in a further considerable cumulative impact on the remaining 86 acres of prime and unique farmland on Site 7. Because implementation of the Proposed Project would result in the conversion, and elimination, of a significant amount of prime and unique farmland in the City and County, the contribution of the Proposed Project would be cumulatively considerable. Consequently, the cumulative impacts of the Proposed Project on prime and unique farmland would be significant. Impacts on Williamson Act lands would be less than cumulatively considerable, as no Williamson Act lands are included on the project sites.

Similar to the loss of existing prime and unique farmland throughout the County, a similar argument can be made with respect to the conversion of existing farmland to non-agricultural uses. Not all Farmland is designated by the FMMP as Important Farmland, but there is land throughout the City and County that is presently being operated for agricultural uses. As development increases throughout the County, these agricultural lands may be converted to non-agricultural development such as residential and commercial uses, which would represent a significant cumulative impact. Because implementation of the Proposed Project would result in the conversion, and elimination, of existing farmland in the City and County to non-agricultural uses, the contribution of the Proposed Project would be cumulatively considerable. Consequently, the cumulative impacts of the Proposed Project on the conversion of agricultural uses would be significant.

■ Air Quality

The geographic context for the air quality cumulative impacts is SRA 19 ('Source Area Receptors' as defined in 3.3 Air Quality) of the Basin, which covers the Saddleback Valley area. The analysis accounts for all anticipated cumulative growth within this geographic area, including ambient growth along with development of the related projects provided in Tables 1-1 and 1-2 in Chapter 1 (Introduction) of this EIR. As discussed in Impact 3.3-3 under the Proposed Project, the significance of cumulative air quality impacts is typically determined according to the project methodology employed by the SCAQMD. For the purposes of impacts relating to objectionable odors, the geographic context is considered to be the City of Lake Forest, due to the limited localized nature of odor impacts.

Cumulative development is not expected to result in a significant impact in terms of conflicting with, or obstructing implementation of, the 2003 AQMP. As discussed in Impact 3.3-1 under the Proposed Project, growth considered to be consistent with the AQMP would not interfere with attainment because this growth is included in the projections utilized in the formulation of the AQMP. Consequently, as long as growth in the Basin is within the projections for growth identified in the Growth Management Chapter of the Regional Comprehensive Plan and Guide, implementation of the AQMP will not be obstructed by such growth. As growth in the Basin has not exceeded these projections, this is considered to be a less-than-significant cumulative impact. Additionally, growth under the Proposed Project would not impair implementation of the AQMP (see Impact 3.3-1 under the Proposed Project). Therefore, the cumulative impact of the Proposed Project regarding potential conflicts with the AQMP would be less than significant.

Because the Basin is currently in nonattainment for ozone, CO, and PM₁₀, cumulative development could violate an air quality standard or contribute to an existing or projected air quality violation. Therefore, this is considered to be a significant cumulative impact. With regard to determining the significance of the Proposed Project contribution, the SCAQMD neither recommends quantified analyses of cumulative construction emissions nor provides methodologies or thresholds of significance to be used to assess cumulative construction impacts. According to the SCAQMD, individual construction projects that exceed the SCAQMD recommended daily thresholds for project-specific impacts would be considered to cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment (Smith 2005). As discussed previously under Impact 3.3-2 under the Proposed Project, the overall construction emissions generated by the Proposed Project are expected to result in short-term

air quality impacts. Thus, construction under the Proposed Project would make a cumulatively considerable contribution to this significant impact. Thus, the cumulative impact of the Proposed Project for construction emissions would be significant and unavoidable.

With regard to daily operational emissions and the cumulative net increase of any criteria pollutant for which the region is in nonattainment, there would be a cumulative significant impact, due to nonattainment of ozone, CO, and PM₁₀ standards in the Basin. With respect to determining the significance of the Proposed Project contribution, the SCAQMD has indicated that if an individual project results in project emissions of criteria pollutants (CO, VOC, NO_x, SO_x, and PM₁₀) that exceed the SCAQMD recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the Proposed Project region is in nonattainment under an applicable federal or state ambient air quality standard (Smith 2005). As discussed previously in Impact 3.3-2 under the Proposed Project, operation of the new land uses proposed by the Proposed Project would cause a net increase in daily operation-related emissions of CO, VOC, NO_x, and PM₁₀ that would exceed the thresholds of significance recommended by SCAQMD. Since the Basin is in nonattainment for CO, and both VOC and NO_x are precursors of ozone, for which the Basin is also in nonattainment, the contribution of daily operational emissions by the Proposed Project would be cumulatively considerable. Thus, the cumulative impact of the Proposed Project for operational emissions would be significant.

Cumulative development is not expected to expose sensitive receptors to substantial pollutant concentrations. As discussed in Impact 3.3-4 under the Proposed Project, the future CO concentrations at the study intersections in 2030 are based on the projected future traffic volumes from the study intersections contained in the traffic study, which takes into account emissions generated from the new land uses under the Proposed Project, future ambient growth, and related projects in the Project Area. As shown in Tables 3.3-5 and 3.3-6, future 8-hour CO concentrations near the study intersections in the Project Area and the “extended study area” would not exceed national or state ambient air quality standards. Therefore, CO hotspots would not occur near these intersections in the future, and this cumulative impact would be less than significant; no significant project cumulative impact would occur for CO. It is also unlikely that future projects will result in long-term future exposure of sensitive receptors to substantial pollutant concentrations, because CO levels are projected to be lower in the future due to improvements in vehicle emission rates predicted by the ARB. Therefore, the cumulative impact of the Proposed Project is considered to be less than significant.

Cumulative development would not have a significant impact in terms of the creation of objectionable odors affecting a substantial number of people. For this threshold, the relevant geographic area would be the City of Lake Forest. Related projects projected to be built in the City include residential, office, commercial, public and religious facilities, and industrial developments, and could include restaurants. Odors resulting from the construction of these projects are not likely to affect a substantial number of people, due to the fact that construction activities do not usually emit offensive odors. In addition, standard construction requirements would be imposed on the developers/applicants associated with these construction projects that would address odors from construction activities. The odor impacts resulting from operation of these projects are not expected to affect a substantial amount of people, as activities typically associated with these uses do not emit offensive odors and solid waste from these

projects would be stored in special areas and in containers as required by City and Health Department regulations. In addition, restaurants are typically required to have ventilation systems that avoid substantial adverse odor impacts. Thus, this cumulative impact would be less than significant. Because a less-than-significant cumulative impact would occur with respect to objectionable odors, the cumulative impact of the Proposed Project would also be less than significant.

■ Biological Resources

The geographical context for the analysis of cumulative biological impact includes the areas covered by the Central and Coastal Orange County Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP) and the associated Implementation Agreement (approximately 325 square miles). The analysis includes all cumulative growth therein, as represented by implementation of each of the thirteen participating City's General Plans and the projects identified in Table A of the GMA for City of Lake Forest.

The primary effects of the Proposed Project, when considered with other projects in the Region (as defined above), would be the cumulative direct loss of open space, vegetation important to raptors, habitat of sensitive or special-status wildlife species, and regional movement corridors that support migratory avian species. Specifically, present and probable future projects in the vicinity of the Proposed Project are anticipated to permanently remove plant and wildlife resources, which could affect special-status species, nesting habitat for resident and migratory avian species, wetlands, sensitive natural plant communities, wildlife movement, and/or local policies or ordinances protecting biological resources.

With respect to special-status species, including sensitive natural plant communities and raptor foraging habitat, although habitat present within different sites of the Proposed Project vary from high to low quality, it does provide open spaces for foraging, refuge, and areas of limited disturbance that can be utilized for reproduction. However, anticipated cumulative impacts have been addressed within the region by the Central and Coastal NCCP/HCP. Specifically, the Southern Coastal NCCP/HCP region was approved in 1996 and established a 37,380-acre reserve system that includes significant areas of twelve major habitat types and covers thirty-nine sensitive plant and animal species. The plan was designed to guide habitat conservation and compatible land use over 209,000 acres of developed land and open space in two noncontiguous areas of Orange County (the Central and Coastal subregions). The plan establishes a permanent reserve of about 38,000 acres of several types of habitat, including 19,000 acres of coastal sage scrub habitat. As the NCCP/HCP focuses on multiple species and habitats and address the conservation of these species on a regional context, the NCCP/HCP by design addresses cumulative biological impacts for take of covered species within the Plan Area. Specifically, as stated on page ES-2 of the NCCP/HCP, specific project purposes of the NCCP/HCP include:

Planning for the protection of multiple-species and multiple-habitats within the coastal sage scrub habitat mosaic by creating a habitat reserve system that contains substantial coastal sage scrub, chaparral, grasslands, riparian, oak woodlands, cliff and rock, forest, and other habitats;

Developing a conservation program that shifts away from the current focus on project-by-project, single species protection to conservation and management of many species and multiple habitats on a subregional level;

Protection non-CSS [sic, coastal sage scrub] within the CSS habitat mosaic at a level comparable to the protection provided for CSS, thereby contributing to the protection of a broader range of species than just the target species or CSS species;

Addressing the habitat needs of the non-target species within subregions [sic, of the NCCP/HCP region] and the non-CSS habitats

Thus, the NCCP/HCP addresses biological impacts for take of covered species within the Plan Area. Impacts to covered species and establishment and implementation of a regional conservation strategy and other measures included in the NCCP/HCP are intended to address the federal, state, and local mitigation requirements for these species and their habitats. Specifically, as stated on page ES-5 of the NCCP/HCP:

Approval and implementation of the NCCP/HCP allows the conservation of large, diverse areas of natural habitat ... Satisfactory implementation of the NCCP/HCP and terms of the Implementation Agreement satisfies state and federal mitigation requirements for designated development and adequately provides for the conservation, protection, and management of the coastal California gnatcatcher and thirty-eight [other] "identified species" and their habitats.

As public and private development, including construction of buildings, structures, infrastructure, and all alterations of the land that are implemented within areas that are outside of the Reserve Areas are permitted under the Plan, cumulative impacts would be less than significant provided that the terms of the NCCP/HCP are fully implemented. This is due to the fact that the creation of the Reserve System provides essential habitat necessary to sustain the target and identified species within each subregion. The commitment of land mitigates the loss of habitat value while the mitigation fees provide for future management of the Reserve System as well as providing lands, and funds for future habitat restoration and enhancement (refer to page II-423 of the NCCP/HCP).

The Proposed Project would comply with the requirements of the NCCP/HCP and, thus, would not conflict with its adopted policies. Cumulative impacts to special-status species, including sensitive natural communities and raptor foraging habitat, are fully addressed within the Plan and are considered less than significant. Accordingly, in combination with the project-specific requirements established by mitigation measures MM 3.4-1 through MM 3.4-3 the Proposed Project's contribution to cumulative impacts would also be less than significant.

Sites 1, 2, 3, and 6 are known to contain areas that would be considered either wetlands or other aquatic habitats (i.e., stream channels) and implementation of the Proposed Project would thus affect waters of the United States (including wetlands), which are regulated by Sections 401 and 404 of the Clean Water Act, as well as Section 1600 of the California Fish and Game Code. These regulations ensure that no net impact to waters of the United States occurs through the proper application of mitigation measures and other conditions established through the Section 401 and 404 permitting processes and, with respect to state regulated waters, through the process of obtaining a Streambed Alteration Agreement as detailed in Section 1600 of the California Fish and Game Code. Therefore, on a cumulative basis, impacts would be considered less than significant. Similarly, the Proposed Project's contribution to those impacts would also be less than significant as a result of the project-specific permitting process.

The Central and Coastal sub regions of the NCCP/HCP supports a number of wildlife movement corridors (California Wilderness Coalition. 2000). While the area is becoming increasingly urbanized, which could restrict wildlife movement, the NCCP/HCP, and the reserve areas established therein, were developed with several goals that specifically support wildlife movement, including the following:

- Conserve large habitat blocks
- Conserve habitat diversity
- Keep conservation areas contiguous and connected;

Accordingly, cumulative impacts to wildlife movement are less than significant. As previously mentioned, the Proposed Project sites that could support wildlife movement would either preserve open space (i.e., green belts) that would connect similar habitats such as the existing open space and the Whiting Ranch Wilderness Park to the regional park/open space area of Site 2, as well as the Aliso Creek corridor, or they would not substantially block the movement of wildlife across them (e.g., Site 6). Therefore, with implementation of mitigation measure MM 3.4-5 shall be implemented the project's contribution to this cumulative impact would be less than significant.

The cumulative context for complying with local policies and/or ordinances protecting biological resources is the City of Lake Forest, which is the area within which the General Plan and/or any applicable ordinances would apply. It is assumed that as part of the development review and entitlement process the City would ensure compliance with any and all applicable local policies and/or ordinances since they were developed for the primary purpose of providing a framework for future development. Therefore, the cumulative impact is anticipated to be less than significant. As previously discussed, the Proposed Project is consistent and will be required to comply with all local General Plan policies protecting biological resources, and no ordinances apply. Thus, the Proposed Project's contribution to this cumulative impact is less than significant.

■ Cultural Resources

The geographic context for a discussion of cumulative impacts to cultural resources is the City of Lake Forest. The analysis includes all cumulative growth therein, as represented by implementation of the City of Lake Forest General Plan and the projects identified in Tables 1-1 and 1-2 in Chapter 1.0, Introduction.

Cumulative development in the City and surrounding jurisdictions could result in the adverse modification or destruction of historic buildings, which could contribute to the erosion of the historic and architectural fabric of the region. However, there are no historic resources located on the Proposed Project sites. The Proposed Project's contribution to any loss of historical resources would, therefore, be less than cumulatively considerable, and this cumulative impact would be less than significant.

Development in the City of Lake Forest and adjacent jurisdictions would require grading and excavation that could potentially affect archaeological and paleontological resources, including human remains. The cumulative effect of these projects would contribute to the continued loss of subsurface cultural resources (archaeological and paleontological resources, including human remains) if these resources are not protected upon discovery. CEQA requirements for protecting archaeological resources and CEQA

and Health Code requirements related to the treatment of human remains are applicable to development in the City of Lake Forest and adjacent jurisdictions, as are local cultural resource protection provisions. If subsurface cultural resources are protected upon discovery as required by law, impacts to those resources would be less than significant. Further, with the mitigation measures that would be imposed and enforced throughout construction of the Proposed Project, the contribution of the Proposed Project to the cumulative destruction of subsurface cultural resources throughout Lake Forest and the region would not be cumulatively considerable, and this cumulative impact would be less than significant.

■ Geology, Soils, and Mineral Resources

The geographic context for the analysis of cumulative soils, geology, seismicity, and mineral resource impacts is the City of Lake Forest, which assumes full buildout of the General Plan.

The Proposed Project would attract an increased number of people to an area exposed to the potential effects related to seismic hazards such as groundshaking or liquefaction. Implementation would increase the number of structures that could be subject to the effects of expansive soils or other soil constraints that could affect structural integrity, roadways, or underground utilities, but would not affect known mineral resources. Site preparation and development would create temporary and/or permanent ground surface changes that could alter erosion rates.

Potentially adverse environmental effects associated with seismic hazards, as well as those associated with expansive soils, topographic alteration, and erosion, usually are site-specific and generally do not combine with similar effects that could occur with other projects in the City. Implementation of the provisions of the City's Building Code, the National Pollution Discharge Elimination System permit requirements, and the General Plan Safety Policies would ensure that potential site-specific geotechnical conditions would be addressed fully in the design of the project and that potential impacts would be maintained at less-than-significant levels.

Potentially adverse environmental effects associated with loss of access to known mineral resources are site-specific. Because the closure of aggregate resource operations on the one Project Site containing mineral resources was planned to occur, and none of the other sites contain mineral resources there would be no cumulative effect to mineral resources in the Study Area.

Under the cumulative development scenario, soils, geology, and seismicity conditions would be as described for the Proposed Project wherein it is shown that all potentially hazardous geotechnical conditions would be controlled or eliminated through compliance with of the existing state and City regulatory framework. Therefore, the project would not contribute to adverse soils, geologic, or seismic effects. Consequently, the soils, geologic, or seismic impacts of project implementation would not be cumulatively considerable.

■ Hazards and Hazardous Materials

The geographic context for the cumulative analysis of hazards and hazardous materials is Orange County, based on the geographic area that could be affected by hazardous materials use or accidental

release into the environment. The cumulative context for the hazards analysis includes development under the Proposed Project, in combination with the development projects listed in the Cumulative Projects list identified in Chapter 1 (Introduction), Tables 1-1 and 1-2, of this EIR and development of other unrelated projects in Orange County.

Cumulative development of both related and unrelated projects elsewhere within the City and County would include some industrial and commercial uses, which could involve the use of greater quantities and variety of hazardous products. Commercial, office, retail, and residential development in the area would also increase the use of household-type hazardous materials within the area. Hazardous materials use, storage, disposal, and transport would result in a foreseeable number of spills and accidents. As discussed in Section 3.7, new development in the County would be subject to hazardous materials regulations codified in Titles 8, 22, and 26 of the CCR. Furthermore, all construction and demolition activities in the County would be subject to Cal/OSHA regulations concerning the release of hazardous materials. Compliance with all state, federal and local regulations during the construction and operation of new developments in the County would ensure that there are no cumulatively considerable significant hazards to the public or the environment associated with the routine transportation, use, disposal or release of hazardous materials.

One of the Proposed Project sites is listed on the SWIS database as a hazardous materials site. Mitigation has been included for the project that would reduce any potential impacts from hazardous materials to a less-than-significant level. Future projects in the City and County would be regulated to ensure that either new development would not occur on such sites, impacts would be mitigated by appropriate remediation, or that the development would result in no impact. Consequently, the Proposed Project would not contribute to any cumulative impact resulting from development of hazardous materials sites, and the impact would not be cumulatively considerable and therefore, less than significant.

Construction and demolition activities associated with buildout of the Proposed Project and other projects in the county could expose schools to hazardous emissions. Various regulations and guidelines pertaining to abatement of, and protection from, exposure to asbestos and lead have been adopted for demolition activities, and would apply to all new development in the County. All demolition that could result in the release of lead and/or asbestos must be conducted according to Cal/OSHA standards. The regulation and programs discussed in Section 3.7 would be followed during construction and demolition activities for all new development in the County. Compliance with these regulations would ensure that schools and the general public would not be exposed to any unusual or excessive risks related to hazardous materials during construction and demolition activities. Therefore, the cumulative impacts associated with the exposure of schools to hazardous emissions would not be cumulatively considerable and therefore be less than significant.

The Proposed Project in combination with development of other projects in the County could result in an increase in traffic on roads and could interfere with the response times of emergency vehicles. Mitigation measures implemented as part of the Proposed Project would require the City to update their Emergency Preparedness Plan to address potential for accidental release of hazardous materials that may be used, stored, and/or transported at any new facility. These mitigation measures would ensure that

interference with emergency response plans or emergency evacuation plans would not be cumulatively considerable and therefore, less than significant.

As discussed in Impact 3.7-7, the Proposed Project could expose people or structures to a significant risk of loss, injury or death involving wildland fires. Implementation of MM 3.7-5, MM 3.12-1, and MM 3.12-2 would reduce the potential impact involving wildfires to a less-than-significant level. This mitigation would also ensure that cumulative impacts associated with buildout of the Proposed Project and other development in the City would not be cumulatively considerable and therefore be less than significant.

As discussed in Impacts 3.7-8, none of the project locations is currently within two miles of a public airport. The only hazardous materials that would be utilized with regularity as part of the project would be diesel and other fuels, and widely used consumer products such as pesticides for landscaping purposes. Standard construction materials such as paints and solvents would also be used during construction, and most likely intermittently throughout the life of the project. Any transport of hazardous materials associated with the Proposed Project would be subject to a number of regulations that exist to minimize the potential for accidental release of hazardous materials. Consequently, because of the limited amounts of hazardous materials associated with the project, the presence of regulations that govern transport of such materials, and the fact that the Proposed Projects are not in proximity to a public airport, the cumulative risk to individuals working at the public airports would not be cumulatively considerable and therefore would be less than significant.

■ Hydrology and Water Quality

The cumulative context for hydrology and water quality impacts includes the San Diego Creek and Aliso Creek watersheds for surface water impacts, and the Irvine Sub-basin area of the Orange County Groundwater Basin for groundwater impacts.

Surface Water

San Diego Creek

Reaches of San Diego Creek and Newport Bay have been listed (303(d)) as impaired by bacteria, pesticides, metals, toxics, sediment, and nutrients. Primary causes of impairment identified are urban runoff and storm sewers and unknown nonpoint sources. Total Maximum Daily Loads (TMDLs) have been developed for sediment, nitrogen, phosphorous, chlorpyrifos, and diazinon. TMDLs for other toxics have been developed by the U.S. Environmental Protection Agency (US EPA), but the State Water Resources Control Board (SWRCB) has not yet adopted them. Applicable water quality goals and limits are included in the Regional Basin Plan.

A large portion of flow within San Diego Creek and its tributaries is from groundwater seepage (base flow). Consequently, contaminants in shallow groundwater will likely migrate with the base flows to local streams and, eventually, Upper Newport Bay. Analysis of surface water samples indicate that high levels of nutrients and selenium present in San Diego Creek surface waters are primarily the result of

weathering and dissolution of naturally occurring geologic materials and not as highly influenced by land use (Hibbs 2000).

The U.S. Army Corps of Engineers, Los Angeles District, in conjunction with the California Department of Fish and Game, is currently undertaking development of a Special Area Management Plan/Master Streambed Alteration Agreement. SAMPs are designed to be conducted in geographic areas of special sensitivity under intense development pressure to achieve a balance between aquatic resource protection and reasonable economic development. There are two main goals of the SAMP process: to establish a watershed-wide aquatic resource reserve program, and to minimize individual and cumulative impacts of future projects in these watersheds.

Urban areas within the SAMP study area include portions of Santa Ana, Tustin, Laguna Hills, Costa Mesa, Irvine, and Lake Forest. Large parts of the SAMP study area are currently developed for agriculture, residential and commercial uses. Aquatic resources in the remaining undeveloped portions of the SAMP study area consist of intermittent and ephemeral drainages, riparian wetlands, and small areas of alkali marshes. The major tributaries of San Diego Creek include Peters Canyon Wash, Hicks Canyon Wash, Rattlesnake Canyon Wash, Borrego Canyon Wash, Serrano Creek, Agua Chinon Wash, Bommer Canyon Creek, Shady Canyon Creek, Round Canyon Wash, Bee Canyon Wash, Trabuco Channel, Bonita Canyon Wash, and Sand Canyon Wash.

Additionally, the Irvine Ranch Water District (IRWD) has recently completed a Revised Draft Environmental Impact Report for the proposed Natural Treatment System. The Natural Treatment System is a plan to construct 31 water quality wetlands to help clean urban runoff within the San Diego Creek Watershed of Orange County and to improve water quality in Upper Newport Bay.

Full buildout of the San Diego Creek watershed will include full buildout of portions of the cities of Costa Mesa, Irvine, Laguna Woods, Lake Forest, Newport Beach, Orange, Santa Ana, and Tustin. Development within this watershed is subject to Basin Plans, DAMP, NPDES Permits, Orange County Codes, pertinent City Codes, and the Orange County Groundwater Management Plan requirements. Potential future adoption of the SAMP and draft TMDLs may result in additional protective requirements. Consequently, full buildout of the area will be required to implement design and plan features that minimize impacts to surface water runoff, groundwater recharge, groundwater elevations, and water quality at least at a similar level as the Proposed Project.

Aliso Creek

The Aliso Creek watershed encompasses a drainage area of approximately 36 square miles that extends 19 miles from the foothills of the Santa Ana Mountains to the Pacific Ocean south of Laguna Beach. Major tributaries include Wood Canyon, Sulphur Creek, Aliso Hills Channel, Dairy Fork, Munger Creek, and English Canyon. The majority of the Aliso Creek watershed is urbanized with residential developments of up to 18 units per acre and includes portions of Lake Forest, Laguna Beach, Foothill Ranch, Portola Hills, Mission Viejo, Laguna Hills, Aliso Viejo, and Laguna Niguel.

Aliso Creek is listed as impaired by nutrients (phosphorous), pathogens (bacteria), and unknown toxicity (303(d) list). Causes of impairment are identified as urban runoff and storm sewers, unknown point sources, and unknown nonpoint sources. No TMDLs have yet been developed for Aliso Creek.

Full buildout of the Aliso Creek watershed will include full buildout of portions of Lake Forest, Laguna Beach, Foothill Ranch, Portola Hills, Mission Viejo, Laguna Hills, Aliso Viejo, and Laguna Niguel. Development within this watershed is subject to Basin Plans, DAMP, NPDES Permits, and City and Orange County Codes requirements. Future development of TMDLs for listed impairments will result in additional regulations for protecting water resources. Consequently, full buildout of the area will be required to implement design and plan features that minimize impacts to surface water runoff, groundwater recharge, groundwater elevations, and water quality at least at a similar level as the Proposed Project.

Groundwater

~~Irvine Sub-basin area of the Orange County Groundwater Basin flows generally westward, away from the Proposed Project area. A water table depression occurs within the region of the IRWD Dyer Wellfields that has resulted in overall groundwater flow within the sub-basin towards the wellfield area.~~

~~Contour maps indicate that local water table elevations fluctuated over the past 50 years, and have dropped by almost ten feet from 2000 through 2003 (OCWD, 2000-03), partially due to both increasing demands and recent climatic drought conditions.~~

~~MTBE is a frequent and widespread contaminant in shallow groundwater throughout California, including the Irvine Sub-basin area. The high mobility and resistance to degradation indicates progressive accumulation. Lawrence Livermore Laboratories have developed a GIS system to manage the threat of MTBE to groundwater supplies. This site can be accessed at: <http://geotracker.swreb.ca.gov/>~~

~~Currently, water supplies from the IRWD Dyer Wellfields are within applicable drinking water standards. However, high salts and nitrates are known to occur within aquifers of the Irvine Sub-basin groundwater that are the result of natural geology and historic agricultural practices.~~

~~A one-by-five-mile groundwater contaminant plume, approximately 200 feet below ground surface, is located west of the MCAS. This plume was generated by spills and disposal of used solvents (e.g., degreasers) at the MCAS that eventually seeped into the groundwater aquifer. Off-station groundwater data have been collected by the OCWD since 1985, when routine monitoring detected trichloroethylene in irrigation wells less than one-half mile from the El Toro MCAS boundary. This plume has the potential for continued migration to drinking water supply wells.~~

~~The OCWD and IRWD began the process for implementation of the Desalter Project in 1990 to clean up the high salinity groundwater for non-potable irrigation use, in addition to remediation of the MCAS contaminant plume. Construction on this project was started summer of 2005 (MCAS El Toro Restoration Advisory Board, 2005). The Desalter Project is expected to provide an additional 8,000 acre-feet of water, some of which would be used for irrigation (40 percent) and the rest as potable water (60 percent) (OCWD, 2001).~~

The non-potable portion of the system will accept flow from wells either within or near the plume of groundwater contaminated with volatile organic compounds (VOC), primarily trichloroethylene (TCE) on or near the former El Toro MCAS. There are two components to the non-potable water system: (1) Approximately 400 gallons per minute (gpm) or 0.58 mgd of groundwater from extraction wells within shallow groundwater unit (SGU) will be treated using air stripping. The SGU treatment system is located on the former site of MCAS El Toro. The primary method of disposal will be groundwater injection. However, if the injection well is out of service or the flow rate from SGU wells exceed the capacity of the injection well, the treated water will be directed to disposal through the Aliso Creek Ocean Outfall (ACOO). (2) Approximately 1,000 gpm (1.44 mgd) of groundwater from IRWD well ET-1 will be treated using air stripping and distributed by the IRWD for irrigation and other non-potable uses within the Santa Ana Basin. Flow from well ET-1 will not be discharged through the ACOO. Approximately 1,900 gpm (2.71 mgd) of groundwater from IRWD wells 78 and 113 (also known as ET-2) will be distributed untreated by the IRWD for irrigation and other non-potable uses within the Santa Ana Basin. Flow from wells 78 and 113 will not be discharged through the ACOO.

The potable portion of the water system (out side of the MCAS contaminant plume) will treat approximately 4,100 gpm (4.61-5.9 mgd) of groundwater from IRWD wells located upgradient of the contaminated groundwater plume using reverse osmosis (RO) to remove total dissolved solids, nitrates, and selenium. The treated water will be distributed by IRWD as potable water. Approximately 457-600 gpm (0.66-0.864 mgd) of RO reject, or brine, will be directed for disposal through the ACOO (RWRCB 2004).# - "Irvine Ranch Water District, 2006. Comment letter on, "Draft Program Environmental Impact Report (DPEIR) for the Opportunities Study. Prepared by Richard Diamond, Dir. of the Water Resources and Environmental Quality Division, Irvine Ranch Water District, March 24, 2006.

IRWD provides a water supply from several sources including groundwater, the quality is regulated and this project would not affect drinking water quality of have an environmental impact in terms of drinking water quality because this project will receive service from IRWD's general portable water distribution system and not any particular location or source.

Full buildout of the San Diego Creek and Aliso Creek watersheds could result in more impervious areas that would affect both peak flow rate and amount of runoff. Increased development often results in more directly connected impervious surfaces that contribute to higher runoff rates and volumes. Higher runoff could exceed existing facilities conveyance capacities, contribute to downstream flooding, and raise the 100-year flood elevation by more than one foot. However, County and City regulations for FEMA compliance will minimize or prevent any significant (more than one foot) increases in flood elevation, and the Orange County Flood Control District (OCFCD) is responsible for regional flood control planning within the County. Where increased runoff could contribute to stream bank erosion, streambed siltation, or otherwise degrade water quality and habitat, the existing NPDES permit prevents discharge of stormwater at rates exceeding existing conditions. Additionally, the overall Proposed Project will reduce runoff from the developed sites compared to existing conditions. Therefore, cumulative impacts to flooding and runoff will be less than significant and the Proposed Project contributions to regional flooding impacts are not cumulatively considerable. Consequently, the Proposed Project will have a no cumulative impact on regional flooding and stormwater runoff.

~~Grading activities associated with development are likely to alter existing drainage patterns and may alter watercourses. Existing city ordinances, however, require a grading permit prior to initiation of construction. Disturbance of watercourse beds or banks, and changes in drainage patterns, would require prior approval and project requirements that would be identified during the permitting process. For example, alteration of streambeds and banks will require permits from the California Department of Fish and Game to assure that any alterations will not significantly impact riparian and aquatic habitat and species; alterations in drainage patterns that might change the flood elevation by more than one foot will require FEMA analysis and a CLOMR or CLOMA as explained in Section 3.8; and, alterations in drainage patterns that would increase bank erosion or flow rates would contribute to habitat degradation, would be required to mitigate impacts for compliance with the NPDES permit. Implementation of the Southern Orange County Special Area Management Plan (SAMP) would also assist in mitigating potential cumulative effects of development within the San Diego Creek watershed. Compliance with the sediment TMDL for San Diego Creek would assist in assuring that impacts to drainage patterns are less than significant. Compliance with the existing DAMP would assist in assuring that all drainage pattern alterations are less than significant for the entire region. Therefore, cumulative impacts to regional drainage patterns would be less than significant with implementation of mitigation. The Proposed Project impacts to local drainage patterns are also less than significant. Therefore, Proposed Project contributions to drainage pattern alterations are not cumulatively considerable and the Proposed Project will have a less than significant cumulative impact.~~

Full buildout of the Irvine Sub-basin of the Orange County Groundwater Basin could have an impact on groundwater that is inconsistent with a groundwater management plan. When the development is in compliance with existing regulations, this impact is considered less than significant and it would not cause or contribute to depletion or degradation of groundwater resources.

Implementation of SB610 and SB221 requires that a Water Supply Assessment be prepared for development activities with a potential consumptive water demand greater than a certain threshold. This Water Supply Assessment would be used in conjunction with the Groundwater Management Plan to assure that adequate water supplies are available for development, without significant impacts on either groundwater or surface water resources within the Orange County Groundwater Basin. If additional Aliso Creek Basin water demands are projected, the WSA would also assess adequacy of this groundwater supply for meeting projected demands.

Full buildout of the region would likely increase demand on water supplies. Irvine Ranch Water District (IRWD) has performed a Water Supply Assessment (see Utilities Section for details) that shows there will be adequate water resources are available to meet Proposed Project needs and future projected growth (2025) without contributing to degradation of the groundwater basin. Approximately 50 percent of the water supplied by the IRWD, within the entire district, is groundwater; colored groundwater and recycled water is used as a non-potable supply.

The Desalter Project, which will begin construction in the summer of 2005 be constructed by the summer of 2006, will also provide remediation of a contaminated groundwater plume that threatens Irvine sub-basin drinking water supply wells. The Desalter Project will also remediate high salt content water. This project will therefore protect current groundwater supplies, as well as increase supplies by

cleaning up currently unusable water. California's ban on MTBE use in gasoline fuel will help prevent further groundwater contamination and allow for natural attenuation of existing contamination. Compliance with MTBE MCLs will prevent degradation of drinking water.

The Orange County Water District (OCWD) aggressively manages the Orange County Groundwater Basin resources to minimize impacts through the OCWD Groundwater Management Plan. Recycled water, imported water for groundwater storage, spreading grounds for groundwater recharge, injection wells, and conduct monitoring and research programs are used to further manage groundwater resources. Several projects have been implemented to recharge groundwater, prevent salt water intrusion, and make effective use of available resources. Most development within the San Diego Creek watershed would be subject to the Groundwater Management Plan. Almost all development within the Irvine Sub-basin would be within the OCWD, and therefore, subject to the OCWD Groundwater Management Plan. ~~However, development within the Aliso Creek may not be subject to the Groundwater Management Plan since it is not located within the groundwater basin, nor is groundwater from this basin used for water supplies. However, the Los Alisos Reclamation Plant provides reclaimed water that is used to supplement the potable water supplies, which reduces demand on the Orange County Basin, and the small Aliso Creek Basin can provide some potable water (less than 3,000 to 4,500 acre-feet per year) supplies (Municipal Water District of Orange County, 2000).~~

~~Implementation of SB610 and SB221 requires that a Water Supply Assessment be prepared for development activities with a potential consumptive water demand greater than a certain threshold. This Water Supply Assessment would be used in conjunction with the Groundwater Management Plan to assure that adequate water supplies are available for development, without significant impacts on either groundwater or surface water.~~

Minimization of reduced recharge impacts, implementation of enhanced recharge strategies, maintenance of the salt water intrusion barrier, and no plans for installation of new water supply wells for the Irvine Sub-basin, would create conditions where there would be no change in groundwater flow direction or gradient, and no sustained reduction in groundwater recharge.

Surface Water

Additionally, existing NPDES stormwater regulations (e.g., construction activities, post construction BMPs, and others) would prevent direct contamination and degradation of groundwater resources. Compliance with regulations set forth in the NPDES General Construction Activity and Industrial Permits, the DAMP, the Groundwater Management Plan, City Codes, and County of Orange codes will prevent discharges of pollutants to groundwater or landscapes where they may infiltrate to groundwater. Compliance with existing regulations would result in potential cumulative impacts that are less than significant and the Proposed Project or would not contribute considerably to cumulative impacts. Given the foregoing, there would be a less than significant cumulative impact of the Proposed Project on groundwater.

Full buildout of the San Diego Creek and Aliso Creek watersheds could result in more impervious areas that would affect both peak flow rate and amount of runoff. Increased development often results in more directly connected impervious surfaces that contribute to higher runoff rates and volumes. Higher runoff could exceed existing facilities conveyance capacities, contribute to downstream flooding, and

raise the 100-year flood elevation by more than one-foot. However, County and City regulations for FEMA compliance will minimize or prevent any significant (more than one foot) increases in flood elevation, and the Orange County Flood Control District (OCFCD) is responsible for regional flood control planning within the County. Where increased runoff could contribute to stream bank erosion, streambed siltation, or otherwise degrade water quality and habitat, the existing NPDES permit prevents discharge of stormwater at rates exceeding existing conditions. Additionally, the overall Proposed Project will reduce runoff from the developed sites compared to existing conditions. Therefore, cumulative impacts to flooding and runoff will be less than significant and the Proposed Project contributions to regional flooding impacts are not cumulatively considerable. Consequently, the Proposed Project will have a no cumulative impact on regional flooding and stormwater runoff.

Grading activities associated with development are likely to alter existing drainage patterns and may alter watercourses. Existing city ordinances, however, require a grading permit prior to initiation of construction. Disturbance of watercourse beds or banks, and changes in drainage patterns, would require prior approval and project requirements that would be identified during the permitting process. For example: alteration of streambeds and banks will require permits from the California Department of Fish and Game to assure that any alterations will not significantly impact riparian and aquatic habitat and species; alterations in drainage patterns that might change the flood elevation by more than one foot will require FEMA analysis and a CLOMR or CLOMA as explained in Section 3.8; and, alterations in drainage patterns that would increase bank erosion or flow rates would contribute to habitat degradation, would be required to mitigate impacts for compliance with the NPDES permit. Implementation of the Southern Orange County Special Area Management Plan (SAMP) would also assist in mitigating potential cumulative effects of development within the San Diego Creek watershed. Compliance with the sediment TMDL for San Diego Creek would assist in assuring that impacts to drainage patterns are less than significant. Compliance with the existing DAMP would assist in assuring that all drainage pattern alterations are less than significant for the entire region. Therefore, cumulative impacts to regional drainage patterns would be less than significant with implementation of mitigation. The Proposed Project impacts to local drainage patterns are also less than significant. Therefore, Proposed Project contributions to drainage pattern alterations are not cumulatively considerable and the Proposed Project will have a less than significant cumulative impact

Full buildout of the San Diego Creek and Aliso Creek watersheds could contribute pollutants to receiving waterbodies with stormwater concentrations that might violate water quality standards, waste discharge requirements, or result in an increase in any pollutant for which a water body is listed as impaired (303(d) list).

Changing land use and land cover associated with development and urbanization can cause increased concentrations and loads of certain types of pollutants in stormwater. San Diego Creek and Aliso Creek are already listed as impaired by certain pollutants. TMDLs have been developed for some pollutants for San Diego Creek. However, no TMDLs have been developed for Aliso Creek or for certain causes of impairment for San Diego Creek. The RWQCBs are charged with developing and implementing TMDLs for all 303(d) listed impairments. Consequently, cumulative conditions will also include development and implementation of TMDLs for all listed causes contributing to impairment. Additionally, compliance with the NPDES Permits, DAMP, County and City Codes, Groundwater Management Plan, and Basin

Plans' objectives will reduce potential water quality impacts to the maximum extent practicable. In the case of certain constituents, e.g., the pesticides diazinon and Chlorpyrifos, reducing contributions of pollutants to the maximum extent practicable may still result in exceedance of TMDLs or otherwise contribute to degradation of water quality. Cumulative impacts on water quality could therefore be potentially significant and unavoidable for pesticides. However, total Proposed Project contributions to surface water quality impairment are likely to be small in comparison to watershed contributions; with the exception of pesticides, the Proposed Project would not contribute considerably to the cumulative impacts. Therefore, Proposed Project cumulative impacts would be less than significant for all but pesticides.

As explained more fully above, under Significant and Unavoidable Impacts, measured concentrations of chlorpyrifos and diazinon in San Diego Creek (at the Campus Station) are approximately 120 ng/L and

848 ng/L, respectively, well above the TMDL requirements. These data suggest that even if pesticide concentrations in Proposed Project stormwater are less than existing conditions, TMDL requirements may still be exceeded. The project would therefore contribute to a significant cumulative impact of pesticides on the watershed.

■ Land Use and Planning

The geographic context for the cumulative impacts associated with land use issues is the City of Lake Forest, which assumes full buildout of the General Plan.

It is anticipated that Citywide growth in general will be reviewed for consistency with adopted land use plans and policies by the City of Lake Forest in accordance with the requirements of CEQA, the State Zoning and Planning Law, and the *State Subdivision Map Act*, all of which require findings of plan and policy consistency prior to approval of entitlements for development. For this reason, cumulative impacts associated with inconsistency of future development with adopted plans and policies would be less than significant. In addition, the contribution of the Proposed Project to such cumulative impacts would not be considerable as new development would be compatible with surrounding land uses and consistent with applicable plans, policies, and regulations. As a result, development under the Proposed Project would have a less than significant contribution to cumulative impacts associated with plan or policy inconsistency.

It is also anticipated that future growth within the City, in general, would result in changes to the existing land use environment in the area through the conversion of vacant land and low-density uses to higher density uses. However, it is assumed that this future development would be consistent with the City of Lake Forest General Plan, as well as zoning requirements. It is possible that cumulative impacts on land use compatibility might occur with respect to one or more of the related projects (or unknown future projects permitted in the area) due to specific issues associated with these projects or their location. This development is also anticipated to be consistent with CEQA review, mitigation requirements, and design review, which would address site-specific issues. Therefore, it can be assumed that through these requirements, future development would be substantially compatible with existing land uses. For this reason, cumulative impacts on land use as a result of incompatibilities between existing and future development would be less than significant. Impacts on land use compatibility under the Proposed Project would be mitigable to less-than-significant levels, such that the contribution to land use impacts would not be cumulatively considerable. This contribution to cumulative impacts would be less than significant.

■ Noise

The geographic context for the analysis of cumulative noise impacts resulting from implementation of the Proposed Project is the City of Lake Forest, which includes all cumulative growth within the City, as represented by full implementation of the City of Lake Forest General Plan. Noise by definition is a localized phenomenon, and drastically reduces in magnitude as distance from the source increases. Consequently, only projects and growth accounted for in the City of Lake Forest General Plan near a particular project site would be likely to contribute to cumulative noise impacts.

Future construction in the City of Lake Forest is not expected to result in a cumulatively significant impact in terms of substantial temporary or periodic increases in ambient noise levels as a result of City Municipal Code construction noise controls. In order to achieve a substantial cumulative increase in construction noise levels, construction activities would need to occur simultaneously on properties adjacent to one another. The City of Lake Forest Municipal Code Section 4-6-7(e) provides an exemption for construction activities from noise limits established in the Code for construction activities that occur between the hours of 7:00 A.M. and 8:00 P.M. on Monday through Saturday, and does not occur on Sundays and federal holidays. Therefore, the Proposed Project's cumulative impact is less than significant.

Cumulative development in the City of Lake Forest should not result in the exposure of people to or the generation of excessive groundborne vibration, due to the localized nature of vibration impacts and the fact that all construction would not occur at the same time and at the same location. No other projects are proposed in close enough proximity to the Proposed Project sites to affect the same receptors as the Proposed Project. Only sensitive receptors located in close proximity to each construction site would be potentially impacted by each development. Therefore, it is assumed for the purposes of this analysis that future development would result in a less-than-significant cumulative impact.

The Proposed Project would negligibly increase noise in some areas of the City while decreasing it in other areas. The 2030 Project scenario would increase roadway noise by a maximum of 0.9 dBA CNEL over the existing 2030 General Plan scenario and would in fact reduce roadway noise on several roadway segments by as much as 0.9 dBA CNEL, due to the Proposed Project creating an overall reduction in traffic resulting from the existing General Plan by 52 percent. However, full buildout of the General Plan with the Proposed Project (2030 Project scenario) would increase roadway noise levels by as much as 11.5 dBA CNEL over existing conditions. This is considered a significant increase over existing conditions. While the project contribution may be less than cumulatively considerable when compared to the 2030 General Plan scenario, noise has been classified as a significant and unavoidable cumulative impact based on a comparison of the 2030 Project scenario with existing conditions.

■ Population and Housing

The geographic context for the analysis of cumulative population and housing impacts is the City of Lake Forest. The cumulative context within this geographic area includes all growth envisioned by SCAG in the Regional Transportation Plan Growth Forecast, as well as all growth anticipated to occur in the City. As shown in Table 1-1 in Chapter 1 (Introduction) of this EIR, the cumulative development projects within the City include industrial, office, hotel, retail, business park, and commercial developments.

Table 5-1 summarizes total related project development within the City. Although no residential units are currently proposed within the City on the cumulative projects list, it is assumed that approximately 25 percent of the employees from the new non-residential development would choose to relocate to the City. Related development would result in approximately 16,212 new employees, out of which 4,053 would be assumed to relocate to the City, creating demand for an equivalent number of housing units. Based on average household size, this would result in a total increase in population of approximately 12,078 persons.

Table 5-1 Related Development Summary	
<i>Use</i>	<i>Quantity</i>
Commercial/Retail	964,392 sf
Office	101,737 sf
Business Park	6,586,654 sf
Industrial	370,380 sf
Hotel	83,000 sf (189 rooms)
Total	8,106,163 sf
Total New Employees (1 person/500 sf)	16,212 persons
Employees within the City/Demand for additional housing units	4,053 persons
Population Increase (2.98 persons per household)	12,078 persons

The maximum buildout of residential and non-residential uses under the Proposed Project along with the related development projects would result in a direct increase in the City's population as a result of the additional housing proposed and persons potentially choosing to relocate to the City. Population increase would total 29,811 persons (17,103 persons resulting from the Proposed Project and 12,078 persons resulting from the cumulative development projects) within the City. Compared with the City's 2004 population of 77,700, the addition of 29,811 persons would represent an approximate 38 percent increase in population over existing conditions. Implementation of the Proposed Project in addition to the cumulative development projects in the City of Lake Forest would result in a total population of 107,511, which would exceed SCAG's population projection of 82,943 persons for the City in 2030. Therefore, cumulative impacts on population growth would be considered significant. The population growth of 17,103 persons resulting from the Proposed Project would also represent a cumulatively considerable contribution to this impact. Therefore, the Proposed Project's contribution to cumulative impacts associated with the potential to induce substantial population growth would be significant.

In general, future development within the City and County would not be anticipated to displace existing housing or people. In the rare instances that housing or people are displaced by new development, existing regulations are in place, such as relocation assistance programs, to ensure that residents are given fair compensation for their loss. As such, cumulative impacts are considered less than significant. Although implementation of the Proposed Project would displace existing housing or people, the additional residential units would be more than sufficient to compensate for the initial loss of units within the Project Area. As such, the contribution of the Proposed Project would not be cumulatively considerable, and the Proposed Project's contribution to cumulative impacts associated with the displacement of existing housing or people would be less than significant.

■ Public Services

The geographic context for the analysis of cumulative public services impacts differs depending on the type of public service analyzed. With respect to police and fire, the geographic context includes all unincorporated areas of Orange County and cities that contract with OCFA and OCSD, whereas the cumulative context for schools includes all areas within the SVUSD boundaries. The geographic context for libraries has been limited to the City of Lake Forest although the Orange County Public Library does

operate branch libraries outside of the City limits due to the size of branch libraries and their capacities being dictated by local, and not county, population.

Police and Fire

As additional development occurs in the County of Orange, there may be an overall increase in the demand for law enforcement and fire protection services, including personnel, equipment, and/or facilities. However, increases in demand are routinely assessed by these agencies as part of their budgeting process, and law enforcement and fire protection services in the County are anticipated to be adequate to accommodate future growth in the County. This is accomplished through collection of mitigation fees and development fees for police and fire protection services and/or facilities, as detailed above. The cumulative impact, therefore, on police and fire services in the County would be less than significant, as every new development within the County would be required to pay the applicable fees to fund planned improvements and ensure adequate staffing and equipment levels. Consequently, the cumulative impact of the Proposed Project would also be less than significant.

Schools

Cumulative development projects within the SVUSD boundaries would consist of a total of approximately 8,405,685 sf of non-residential development. No residential units are identified on the cumulative projects list within the SVUSD boundaries because none had been proposed within the SVUSD boundaries at the time the NOP for the Proposed Project was issued. Should non-residential cumulative projects generate a demand for the construction of additional housing within the SVUSD boundaries, the new housing development would be subject to the requirements of Government Code Section 65996 requiring the payment of school mitigation fees, which according to State law mitigate school impacts. For this reason, no cumulative impacts are anticipated.

Libraries

Within the Orange County Public Library system, there is currently one additional 10,000 sf branch library planned in the western portion of the City of Irvine. No other branch libraries or expansions of existing facilities are planned. Currently, the countywide resources of the Orange County Public Library are approximately 2.5 million volumes. As detailed in Section 3.11, cumulative development in the City would result in a population increase in the City of approximately 12,078 persons. Based on the Orange County Public Library's standards, approximately 2,415 sf of library space and 18,117 volumes would be necessary to adequately serve the population resulting from cumulative development. In conjunction with the Proposed Project, 5,651 sf of library space and 42,387 volumes would be required to conform to Orange County Public Library standards. The current branch library resources available to City of Lake Forest residents total approximately 145,000 volumes. Cumulative development in the City would result in the need for a 29 percent increase of Orange County Public Library resources locally, 17 percent of which would be attributed to the Proposed Project. However, implementation of MM 3.12-5 would reduce the impact from the Proposed Project on library services to less than significant. With payment of these required fees, the Proposed Project's contribution to the cumulative impact would not be cumulatively considerable, and would be less than significant.

■ Recreation

The geographic context for the analysis of cumulative recreational impacts is the City of Lake Forest, including all cumulative growth therein, as represented by full implementation of the City of Lake Forest General Plan and development of the related projects within the City of Lake Forest provided in Table 1-1 in Chapter 1 (Introduction) of this EIR.

Development under the Proposed Project, in combination with development proposed throughout the City, would entail the addition of both persons and parkland to City inventory. Because the Proposed Project includes more parkland than required by the City standard, the Proposed Project's contribution to any recreation impacts resulting from cumulative development would not be cumulatively considerable.

■ Transportation/Traffic

The 2030 Project Scenario (existing conditions, plus cumulative projects, plus the Proposed Project, plus MPAH funded and unfunded improvements) cumulative analysis includes past, present and reasonably foreseeable cumulative projects within the City and nearby jurisdictions identified to occur within the vicinity of the project site, in addition to General Plan buildout conditions identified to year 2030 as well as the Proposed Project. The traffic analysis considers trips generated by cumulative projects in its development of future baseline conditions. Therefore, the cumulative impact analysis is incorporated into the Year 2030 analyses presented in Section 3.14.6. As identified above, impacts would be cumulatively considerable at selected intersections. As shown in Table 3.14-13, the 2030 Project Scenario would result in a worsening or new exceedance of intersection LOS standards at the following 23 intersections compared to existing conditions:

- Within the Study Area:
 - 2. Bake & Portola
 - 10. Lake Forest & Rancho
 - 12. El Toro & Portola/Santa Margarita
 - 14. Bake & Irvine/Trabuco
 - 17. El Toro & Trabuco
 - 22. Bake & Jeronimo
 - 25. El Toro & Jeronimo
 - 26. Los Alisos & Jeronimo
 - 30. Los Alisos & Muirlands
 - 32. Ridge Route & Rockfield
 - 34. Los Alisos & Rockfield
 - 36. Lake Forest & I-5/Carlota
 - 37. Paseo De Valencia & Carlota

- 39. El Toro & Avd Carlota
- 41. Alton & Towne Centre Dr.

- Within the Expanded Study Area:

- 105. Alton Pkwy. at Irvine Bl.
- 117. Alton Pkwy. at Toledo Wy.
- 125. Bake Pkwy. at Rockfield Bl.
- 130. Ridge Route at Moulton Pkwy.
- 131. Santa Maria Av. at Moulton Pkwy.
- 132. El Toro Rd. at Moulton Pkwy.
- 137. Los Alisos Bl. at Trabuco Rd.
- 138. Trabuco Rd. at Alicia Pkwy.

The LFTM program, which is part of the Proposed Project, would reduce the impact of cumulative development and the project at all but the following intersections to less than significant (i.e. all the intersections but those listed below would operate within the Performance Standards):

- Within the Study Area:

- 2. Bake & Portola
- 14. Bake & Irvine/Trabuco
- 22. Bake & Jeronimo
- 25. El Toro & Jeronimo
- 26. Los Alisos & Jeronimo
- 30. Los Alisos & Muirlands
- 32. Ridge Route & Rockfield
- 36. Lake Forest & I-5/Carlota

- Within the Expanded Study Area:

- 105. Alton Pkwy. at Irvine Bl.
- 130. Ridge Route at Moulton Pkwy.
- 131. Santa Maria Av. at Moulton Pkwy.
- 132. El Toro Rd. at Moulton Pkwy.
- 137. Los Alisos Bl. at Trabuco Rd.
- 138. Trabuco Rd. at Alicia Pkwy.

However, the LFTM program, which is part of the Proposed Project, would reduce the Proposed Project's contribution to cumulative impacts at the following intersections to less than cumulatively considerable, (See Table 3.14-15) under the 2030 LFTM Scenario, although the intersection would still exceed standards in either the A.M. or P.M. peak period as a result of cumulative development:

- Within the Study Area:
 - 2. Bake & Portola
 - 14. Bake & Irvine/Trabuco
 - 22. Bake & Jeronimo
 - 26. Los Alisos & Jeronimo
 - 30. Los Alisos & Muirlands
 - 36. Lake Forest & I-5/Carlota
- Within the Expanded Study Area:
 - 105. Alton Pkwy. at Irvine Bl.

The Proposed Project in combination with cumulative development would thus result in cumulative unmitigated impacts at the following remaining intersections, based on a comparison of the 2030 Project Scenario to existing conditions:

- Within the Study Area:
 - 25. El Toro & Jeronimo
 - 32. Ridge Route & Rockfield
- Within the Expanded Study Area:
 - 130. Ridge Route at Moulton Pkwy.
 - 131. Santa Maria Av. at Moulton Pkwy.
 - 132. El Toro Rd. at Moulton Pkwy.
 - 137. Los Alisos Bl. at Trabuco Rd.
 - 138. Trabuco Rd. at Alicia Pkwy.

These are significant unmitigated cumulative impacts. The project's contribution to these cumulative impacts may be cumulatively considerable when compared to existing conditions. However, it should be noted that cumulative impacts at one of these intersections (25. El Toro & Jeronimo) would be significantly less with Proposed Project, than with development of the project sites consistent with the existing General Plan, and the cumulative impact to the remaining six intersections would not be significantly different under the 2030 Project Scenario than the 2030 General Plan Scenario (see Table 3.14-14).

■ Utilities and Service Systems

The geographic context for the analysis of cumulative water supply impacts is IRWD's service area. The District's service area includes all of the City of Irvine and a majority of Lake Forest. The geographical context for both wastewater and solid waste is Orange County. The service providers for these issues areas are: the Orange County Sanitation District and the Orange County Integrated Waste Management

Department, respectively, both of which serve the entire County. For cumulative impacts related to electricity and natural gas, the geographic context is the service areas of SCE and SCGC, respectively.

Water

Development of cumulative projects within IRWD's service area would demand additional quantities of water, depending on net increases in population, square footage, and intensity of uses. These projects would contribute to the overall regional water demand, which has been estimated by IRWD to be approximately 102,350 AF/yr and 42,337 (potable water) AF/yr (nonpotable water) by 2025. According to IRWD's WSA, the demand estimated for the Proposed Project is included in IRWD's current planning projection. Because IRWD will have water supplies for projected growth through 2025, cumulative impacts to water supply would be less than significant. The contribution of the Proposed Project to impacts to water supply would not be cumulatively considerable.

Solid Waste

Adequate capacity currently exists at the Orange County IMWD solid waste disposal facilities used by the City. Frank R. Bowerman, Olinda Alpha, and Prima Descheca currently have additional landfill space and remaining daily tonnage capacity that is adequate to accommodate the Proposed Project's solid waste disposal needs. The projected project would generate 20.9 tons of solid waste per day. Even if the entire waste stream from the Proposed Project were sent to each facility separately, 20.9 tpd represents between a 0.28 percent and 0.79 percent increase in the daily tonnage, depending on the landfill used. As discussed, all three facilities are currently operating under full utilization.

The cumulative projects considered in the cumulative impact analysis include new commercial/retail, office, business park, industrial, and residential uses. Despite the reported excess capacity at the facilities, any existing capacity that currently exists at Orange County landfill facilities is finite. Thus, it is considered that, without specific plans for substantial expansion of Orange County IMWD facilities, solid waste generation from the cumulative projects in these cities would exacerbate regional landfill capacity issues in the future. That is, any additional solid waste incrementally added to existing facilities will decrease the amount of time until they are completely full. The implementation of source reduction measures would be required on a project-specific basis and plans such as those for recycling would partially address landfill capacity issues by diverting additional solid waste at the source of generation. However, because of the issues discussed above, the impacts of development associated with cumulative projects within and around the City would be significant. The project's contribution, however, would be less than cumulatively considerable..

Wastewater

Development of cumulative projects within the IRWD service area would generate additional quantities of wastewater, depending on net increases in population, square footage, and intensification of uses. These projects would contribute to the overall regional demand for wastewater treatment service. The wastewater for this project would go to LAWRP with only a portion going to MWRP. MWRP is operating at 78 percent capacity. Presently, plans are currently underway to increase the treatment

capacity of MWRP to 33 mgd. This improvement is anticipated to begin in December 2006. This cumulative impact is considered less than significant. The City would continue to implement water conservation measures that would result in a decrease in wastewater generation. Therefore, as the plant retains excess capacity, cumulative impacts are considered less than significant.

LAWRP currently has sufficient capacity to treat the wastewater from the project. Cumulative growth in the IRWD service area could result in the need for additional conveyance infrastructure, and due to the partially developed nature of the service area, it is expected that such expansion of conveyance infrastructure could result in significant cumulative environmental effects. Although the Proposed Project would require the expansion of existing infrastructure in order to establish connections to existing conveyance infrastructure, there would be adequate capacity in the existing IRWD water treatment plants to serve future flows. The contribution of the Proposed Project would not be cumulatively considerable, and the project's cumulative impact would be less than significant.

Although the Proposed Project would require the expansion of existing infrastructure in order to establish connections to existing conveyance infrastructure, there would be adequate capacity in the existing IRWD water treatment plant to serve future demand.

Energy

Development of cumulative projects within the City in combination with all other development within the SCE service area would result in the permanent and continued use of electricity resources, which may require electricity providers to expand their existing facilities to serve new development within the City. However, SCE has indicated they are a "reactive" utility, and will provide electricity as customers request their services. As such, SCE constantly evaluates the potential growth that is expected to occur within its service area to determine the future demand for electricity that would be generated by the growth. From the projected future demand, SCE would construct new and/or expand its existing facilities to ensure that adequate electricity would be provided to meet the demands generated by the projected growth in its service area. Therefore, cumulative impacts related to the ability to provide adequate electricity for cumulative growth would be less than significant. Consequently, the cumulative impact of the Proposed Project is less than significant.

Continued development within the SCGC service area would result in the permanent and continued use of natural gas resources, which may require natural gas providers to expand their existing facilities to serve new development. However, SCGC has indicated that it is a "reactive" utility and they will provide natural gas as new customers request its services. Thus, SCGC would continually construct new and/or expand its existing facilities, to the extent necessary, to ensure that adequate natural gas would be provided to meet the demands generated by projected future growth in its service area. As such, cumulative impacts related to the ability to provide adequate natural gas for cumulative growth would be less than significant. Consequently, the cumulative impact of the Proposed Project would also be less than significant.

analyzed by this EIR, may properly be selected by the decision-making body as the approved project.

- **Chapter 5: Other CEQA Considerations**—This section summarizes the significant environmental effects of the Proposed Project, including cumulative impacts, as well as irreversible changes to the natural environment resulting from the Proposed Project, and growth-inducing impacts.
- **Chapter 6: Organizations and Persons Consulted/List of EIR Preparers**—This section identifies all individuals responsible for the preparation of this EIR.

Technical appendices, included with this EIR on a CD-ROM, are as follows:

- **Appendix A**—Notice of Preparation and Comment Letters
- **Appendix B**—Aerial and Site Photographs and Descriptions
- **Appendix C**—Orange County 2000–2002 Land Use Conversions
- **Appendix D**—Air Quality Data
- **Appendix E**—Sensitive Species Occurring within the Project Area
- **Appendix F**—One-Mile Radius Environmental Record Search (Hazards)
- **Appendix G**—Irvine Ranch Water District Water Supply Assessment
- **Appendix H**—Noise Monitoring Data—Sound Level Meter Summary
- **Appendix I**—Vacant Land Opportunities Phase III Traffic Study
- **Appendix J**—City of Lake Forest Utility Report
- **Appendix K**—Coastal Sage Scrub and California Gnatcatcher Reports
- **Appendix L**—California Gnatcatcher Report for the Homecoming Site
- **Appendix M**—Hydrology Studies

1.10 CUMULATIVE PROJECTS SCENARIO

Cumulative impacts refer to the combined effect of project impacts with the impacts of other past, present, and reasonably foreseeable future projects. Both CEQA and the CEQA Guidelines require that cumulative impacts be analyzed in an EIR when the resulting impacts are cumulatively considerable, and therefore, potentially significant. The discussion of cumulative impacts must reflect the severity of the impacts, as well as the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone. Furthermore, the discussion is intended to be guided by the standards of practicality and reasonableness. According to Section 15355 of the CEQA Guidelines:

“Cumulative impacts” refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

- (a) The individual effects may be changes resulting from a single project or a number of separate projects.
- (b) The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Furthermore, according to CEQA Guidelines Section 15130(a) (1)–(a) (3):

- (1) As defined in Section 15355, a “cumulative impact” consists of an impact, which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR should not discuss impacts, which do not result in part from the project evaluated in the EIR.
- (2) When the combined cumulative impact associated with the project's incremental effect and the effects of other projects is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR. A lead agency shall identify facts and analysis supporting the lead agency's conclusion that the cumulative impact is less than significant.
- (3) An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable.

In addition, as stated in the CEQA Guidelines, Section 15064(i) (5) it should be noted that:

- (5) The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the Proposed Project's incremental effects are cumulatively considerable.

Therefore, an EIR's discussion of potential cumulative impacts focuses on whether the impacts of the project under review are cumulatively considerable when combined with the impacts caused by other past, present, or future projects.

The City of Lake Forest is located in Growth Management Area 9 (GMA-9), established by the Orange County General Plan pursuant to Measure M, the revised Traffic Improvement and Growth Management Ordinance. The main purpose of the Orange County Growth Management Plan Element is to ensure that the planning, management, and implementation of traffic improvements and public facilities are adequate to meet the current and projected needs of Orange County. The County is divided into eleven GMAs. Lake Forest is part of GMA-9 with Mission Viejo, Rancho Santa Margarita, San Juan Capistrano, parts of Irvine, and some unincorporated county areas.

Table 1-1 (Growth Management Area No. 9—Cumulative Projects) provides a list of cumulative development projects planned, approved, or under construction in GMA-9. Figure 1-1 (Land Use Coordination Map) illustrates the location of these cumulative projects. Cumulative impact discussions for each issue area are provided in Chapter 5 (Other CEQA Considerations).

The related projects listed in Table 1-1 are described by name, level of entitlement, development type, description, location, and development status. The related projects for adjacent cities not in GMA-9 in Table 1-2 (Related Projects in Adjacent Cities [not in GMA-9]) are listed by type, and square footage is listed if known. For an analysis of the cumulative impacts associated with these cumulative projects and the Proposed Project, the reader is referred to Chapter 5 (Other CEQA Considerations) of this EIR.

Cumulative impacts analyzed in this EIR (impacts from related projects in conjunction with the Proposed Project) would likely represent a “worst-case” scenario for the following reasons:

- Not all of the related projects are expected to be approved and/or built
- Impact projections for related projects would likely be, or have been, subject to unspecified mitigation measures, which would reduce potential impacts
- Many related projects are expressed in terms of gross square footage or are conceptual plans such as master plans that assume complete development. In reality, such projects may be smaller because of the demolition or removal of existing land uses resulting from development of the related project

Table 1-1 Growth Management Area No. 9—Cumulative Projects

<i>Project No.</i>	<i>Name</i>	<i>Level of Entitlement</i>	<i>Development Type</i>	<i>Description</i>	<i>Location</i>	<i>Development Status</i>
PROJECTS APPROVED BUT NOT BUILT						
County of Orange						
OR-1	Coto de Caza	GP amendment, zone change, tract maps, development agreement, area plan	Residential, commercial, and open space	4,929 gross acres; maximum of 6,268 dwelling units; 2,572 acres residential and 105 acres of commercial	Located south of Rancho Santa Margarita and west of Dove Canyon	4,822 DU and 74 acres of commercial currently exist
OR-2	Las Flores	EIR 506, GPA, Zone Change	Residential, commercial, office, and open space	1,005 gross acres; maximum 2,214 DU, 319 acres of residential development and 7 acres of commercial	Located approximately at Oso Parkway and Antonio Parkway	35,493 sf commercial uses and 1,999 DU as of 12/31/99 (buildout)
OR-3	Santiago Ranch	GPA, zone change	Residential and open space	120 gross acres, 69 acres of residential, 51 acres open space	Located south of Portola Hills and west of Santiago Canyon Road	Currently undeveloped; project inactive
OR-4	Ladera	GPA, zone change, planned community	Residential, commercial, open space	2,390 gross acres; maximum 8,400 DU; 1,989 acres residential, 25 acres commercial, and 111 acres urban activity center	Directly east of Mission Viejo, south of Las Flores Planned Community, north of Ortega Hwy	Planned Community approved October 1995; 5,761 residential units and 165,000 sf commercial projected by 2005.
City of Irvine						
IR-1	Destination Hotels	Master Plan	Resort	400-room hotel and conference facilities	NEC Irvine Center Drive/Alton	Approved
IR-2	Roy Herbold Jr. Architect	CUP	Commercial	CUP for bank with drive-thru ARM	PA 32-76 Technology Drive	Approved
IR-3	Woodbury Village Apts., Site I	Master Plan	Residential	390 apartment homes	Jeffrey and Irvine Blvd.	Approved

Table 1-1 Growth Management Area No. 9—Cumulative Projects

<i>Project No.</i>	<i>Name</i>	<i>Level of Entitlement</i>	<i>Development Type</i>	<i>Description</i>	<i>Location</i>	<i>Development Status</i>
IR-4	Woodbury Village Apts., Site II	Master Plan	Residential	420 apartment homes	Townsend and Groveland	Approved
IR-5	PA6 Phase I	Tentative tract map	Residential	TTM for PA6 in Northern Sphere	PA6	Approved
IR-6	PA6 Phase I Cal Pac	Master Plan	Residential	Master plan for 102 SFD residential units in PA9A and other loop.	PA9A	Approved
IR-7	PA6 Phase I Lennar	Master Plan	Residential	Master plan for 62 SFD units in PA9A outer loop	PA9A	Approved
IR-8	PA9 Woodbury	Master Plan	Residential	Master plan for 9A residential	PA9A	Approved
IR-9	Woodbury Inner Loop West	Tentative Tract Map	Residential	TTM for Planning Area 9A	PA9A	Approved
IR-10	Cal Pac	Master Plan	Residential	Master plan for new detached condos in Woodbury	Groveland, Townsend, and BB Street	Approved
IR-11	PA35 Condo	Tentative Parcel Map	Industrial	TPM for 2 & 4 Hughes in PA35	2, 4 Hughes	Approved

City of Lake Forest

LF-1	Rados Property	Site development Permit 2000-09 and Parcel Map 2000-164	Industrial buildings	6 industrial buildings totaling 165,178 sf and 271 parking spaces	East end of Vista Terrace	Approved December 2001; no building permits pulled
LF-6	Viejo Substation	Site Development Permit 2004-15	Electrical substation	SCE, unmanned substation on 12.5 acres	Icon and Definition, Foothill Ranch	Under construction
LF-8	Staybridge Hotel	Site Development Permit 2000-22	Hotel	83,000 sf, 189 rooms	Rancho Pkwy and Bake Pkwy	Under construction
LF-10	Ascension Cemetery	Use Permit 2000-13	Cemetery	Expand existing cemetery from 14 to 24 acres with addition of 6 buildings ranging from 2,400 sf office to 17,400 sf mausoleum	24754 Trabuco Road	Under construction
LF-11	Heritage Hill Shopping Center	Use Permit 2002-05	Shopping center	Add 7,992 sf to existing retail center and convert 3,500 sf of office to restaurant use	Lake Forest Drive and Trabuco Road	Under construction

Table 1-1 Growth Management Area No. 9—Cumulative Projects

<i>Project No.</i>	<i>Name</i>	<i>Level of Entitlement</i>	<i>Development Type</i>	<i>Description</i>	<i>Location</i>	<i>Development Status</i>
LF-12	Saddleback Valley Plaza (The Orchard)	Site Development Permit 2002-05	Shopping Center	274,000 sf	El Toro Road between Rockfield and Twin Peaks	Under construction
LF-13	Grace Community Church	Use Permit 2004-03	School	Add private elementary and high school campus on existing Church	26052 Trabuco Road	Under construction

City of Mission Viejo

MV-1	PA38 Mission Foothill Marketplace	Area Plan 91-6P Vest. Tent. Tract 12632; Development Agreement; Site plan SP95-209P	Commercial	148,980 sf grocery store/restaurant/retail	North of Los Alisos Blvd between Marguerite Pkwy and SR-241	Developer only build approximately 60 percent of center due to market conditions
MV-2	PA26 Presbyterian Church of the Maker	Site Plan SP96-242P	Community facility	64,000 sf church and preschool expansion	NWC of Marguerite Pkwy and Oso Pkwy	Preschool building complete; church expansion in future phase
MV-3	Pacific Medical Buildings	Site Plan	Medical Office	140,000 sf	Crown Valley/Medical Center	Approved by Planning Commission
MV-4	Makena Great America	Site Plan	Retail/Office	14,650 sf	SEC of Oso and I-5 northbound off ramp	Under construction
MV-5	CT Realty	Site Plan	General Office	57,000 sf	Acero/Pala	Under construction
MV-6	Mission Hills Medical	Site Plan	Medical Office	30,488 sf	Pala/Alambre	Under construction
MV-7	Ayers Hotel	Site Plan	94-room hotel	63,054 sf	Los Alisos	Approved by Planning Commission
MV-8	MV Church of Christ	Site Plan	Church addition	28,564 sf	26558 Marguerite	Approved by Planning Commission
MV-9	St. Joseph Health System	Site Plan	Medical Office	35,000 sf	Crown Valley/Los Altos	Under construction
MV-10	Pendragon North America Jaguar/Land Rover	Site Plan	Auto Dealership	42,300 sf	28701 Marguerite	Approved by Planning Commission

Table 1-1 Growth Management Area No. 9—Cumulative Projects

Project No.	Name	Level of Entitlement	Development Type	Description	Location	Development Status
City of Rancho Santa Margarita						
RSM-1	Rancho Santa Margarita	GPA; Area Plan; Feature Plan; Tract Map; Site Plan; Development Agreement	Residential, commercial, office, business park, industrial, recreation, and open space	City is approximately 13 square miles (8,280 acres); maximum of 17,608 DU, 1,660 acres of residential development, 67 acres of commercial, 235 acres of industrial and office	East of Mission Viejo, south of O'Neil Regional Park	16,515 DU as of 2000 Census; 16,734 DU expected by 2020; 2,715,000 sf commercial and 3,886,000 sf industrial/office at buildout
City of San Juan Capistrano						
SJC-1	Capistrano Gateway (Resco/NuWest)	GPA; architectural control	Church (Phase I); commercial office (Phase 2)	117,000 total gross sf	East side of Rancho Viejo Road and 200 ft south of Via Escalar	Approved; no building permits submitted
SJC-2	Honeyman Ranch-William Lyon	TTM	Residential lots for custom homes	199 single-family DU	East side of Rancho Viejo Road north of Ortega Hwy	Approved
SJC-3	San Juan Law Center	Architectural Control	Professional office use	5,963 total sf	North side of Ortega Hwy east of Rancho Viejo Road	Approved
SJC-4	Ortega Animal Hospital	Architectural Control	Veterinary clinic	7,767 total sf	North side of Ortega Hwy east of Rancho Viejo Road	Approved
SJC-5	Pacifica San Juan (T15609)	TTM	Residential	416 single-family DU	East side of I-5 between I-5 NB off ramp at Valle Road and Camino Las Ramblas	Approved
SJC-6	Whispering Hills	TTM	Residential	155 single-family DU	West side of La Pata Ave and south of Ortega Hwy	Approved
SJC-7	J Serra High School	Architectural Control	Private high school	2,000 students	West of I-5 and south of J Serra Road	Approved
SJC-8	CUSD Ancillary Facility	Architectural Control	Administrative offices	125,000 gsf	South terminus of Valle Road and east of I-5	Approved

Table 1-1 Growth Management Area No. 9—Cumulative Projects

Project No.	Name	Level of Entitlement	Development Type	Description	Location	Development Status
SJC-9	Mammoth Offices	Architectural Control	Commercial offices	99,392 gsf	East side of Rancho Viejo Road at the I-5/SJHTC connector	Approved
SJC-10	San Juan Meadows	TTM	Residential	275 Single-family DU; 165 senior apartments	South of La Novia Avenue and east of I-5	Approved

PROJECTS CURRENTLY IN PROCESS**County of Orange**

OR-A	Rancho Mission Viejo Development Plan	GPA, zone change, planned community	Residential, commercial, business park, recreation, open space	22,815 gross acres. Buildout maximum for the PC is 14,000 DU in the year 2025; 770,000 sf urban activity center; 390,000 sf neighborhood center; 3,930,000 sf business park	East and northeast of San Juan Capistrano	DEIR 589 in preparation; Planning Commission hearing in September/October 2004; Board hearing late Fall 2004
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City of Irvine

IR-A	MCAS El Toro (PA30)	Community Reuse Plan; GPA; zone change	Recreation, residential, commercial, and institutional	3,700 gross acres	East of I-5, south of ETC east leg, west of SR-241, and north of Alton Pkwy	Ultimate buildout is anticipated by year 2020
IR-B	Government Solutions	CUP	Institutional	CUP for 10,500 sf childcare center on 1.57 acres	PA31 – SW corner Laguna Cyn Road and Marshburn Channel	Under review
IR-C	Standard Pacific SFD – Woodbury NW Outer Loop	Master Plan	Residential	Master plan for 58 single-family DU in PA9A	Jeffrey & Irvine	Under review
IR-D	John Laing SFD – Woodbury NW Outer Loop	Master Plan	Residential	Master plan for 65 single-family DU in PA9A	Jeffrey & Irvine	Under review
IR-E	PA9C	TTM	Residential	TTM for workforce housing	Trabuco and Sand Canyon	Under review
IR-F	PA9C	Master Plan	Residential	Master plan for workforce housing	Trabuco and Sand Canyon	Under review
IR-G	PA9A SE Outer Loop	TTM	Residential	TTM for new residential in PA9A	NWC of Trabuco and Sand Canyon	Under review; PC-11/4/2004
IR-H	PA9A SE Inner Loop	Master Plan	Residential	Master plan for 288 single- and multi-family DU	SE Quadrant of PA9A	Under review

Table 1-1 Growth Management Area No. 9—Cumulative Projects

<i>Project No.</i>	<i>Name</i>	<i>Level of Entitlement</i>	<i>Development Type</i>	<i>Description</i>	<i>Location</i>	<i>Development Status</i>
IR-I	PA9A SE Inner Loop	TTM	Residential	TTM for 288 SFR/MFR	SE Quadrant of PA9A	Under review
IR-J	Woodbury Affordable – Site 1 – 150 units	Master Plan	Residential	Master plan for development of affordable apartment in Woodbury, PA9A	Woodbury – NE Quadrant	Under review
IR-K	PA9 Affordable Housing – Site II	Master Plan	Residential	Master plan for affordable apartment site in PA9A site II	Woodbury SE Quadrant	Under review
IR-L	Spectrum 6 Parcel Map	TPM		TPM 2004-143 in PA31	Laguna Canyon and Waterworks	Under review
IR-M	Wendy's Restaurant	CUP	Commercial	CUP for Wendy's fast-food restaurant with drive-thru	Technology & Alton	Under review

City of Lake Forest

LF-A	Silhouette Medical Plaza	Use Permit 2004-07	Medical Office	New 19,186 sf two-story medical office with reduced parking requirements	Portola Parkway and Glenn Ranch Rd	Tentatively scheduled for PC review September 9, 2004
LF-B	Home Depot	Site Development Permit 2004-18	Retail	New 120,000 sf Home Depot and inline tenants	NE corner of El Toro Rd and Rockfield Blvd	Application under review
LF-C	Portola Hills South	Portola Hills Planned Community	Business park; commercial	Portola Hills Planned Community allows up to 2,271,654 sf Business Park and 554,500 sf of Commercial	Glenn Ranch Road at Saddleback Ranch Road	No project-level entitlement ^b
LF-D	Opportunities Study (NOTE: If approved, would replace Shea/Baker and Portola Hills South Entitlement)	N/A	N/A	N/A	N/A	N/A

City of Mission Viejo

None						
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City of Rancho Santa Margarita

None						
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Table 1-1 Growth Management Area No. 9—Cumulative Projects

<i>Project No.</i>	<i>Name</i>	<i>Level of Entitlement</i>	<i>Development Type</i>	<i>Description</i>	<i>Location</i>	<i>Development Status</i>
City of San Juan Capistrano						
SJC-A	Gates Offices	Architectural Control	Commercial offices	14,800 gsf	West side of Rancho Viejo Road and north of Ortega Hwy	Under review
SJC-B	Ortega Ranch	Architectural Control	Commercial offices	160,000 gsf	West side of Rancho Viejo Road and north of Ortega Hwy	Under review
SJC-C	Valle Ranch	Architectural Control	Commercial offices	43,000 gsf	South terminus of Valle Road and east of I-5	Under review

SOURCE: Measure M Growth Management Area 9 Inter-Jurisdictional Planning Forum, October 29, 2004

- ^a 4,315,000 sf business park uses secured by D.A. Phase I with project-level entitlement of 265,740 sf on 18.38 acres. If the Proposed Project is approved, this development would be removed.
- ^b Portola Hills PC allows up to 2,271,654 sf of Business Park and 554,500 sf of commercial. If the Proposed Project is approved, this project would be removed

Table 1-2 Related Projects in Adjacent Cities (not in GMA-9)

<i>Development Type</i>
City of Laguna Woods
Clubhouse 7 – Leisure World
Senior Housing (134 units) at 23522 Paseo de Valencia
City of Laguna Hills
Urban Village Specific Plan
Walgreen's and façade changes at the DMV shopping center
Union 76 at Paseo de Valencia and El Toro converting service bays to convenience store
Civic Center slated for completion
SOURCE: City of Lake Forest, 2005.

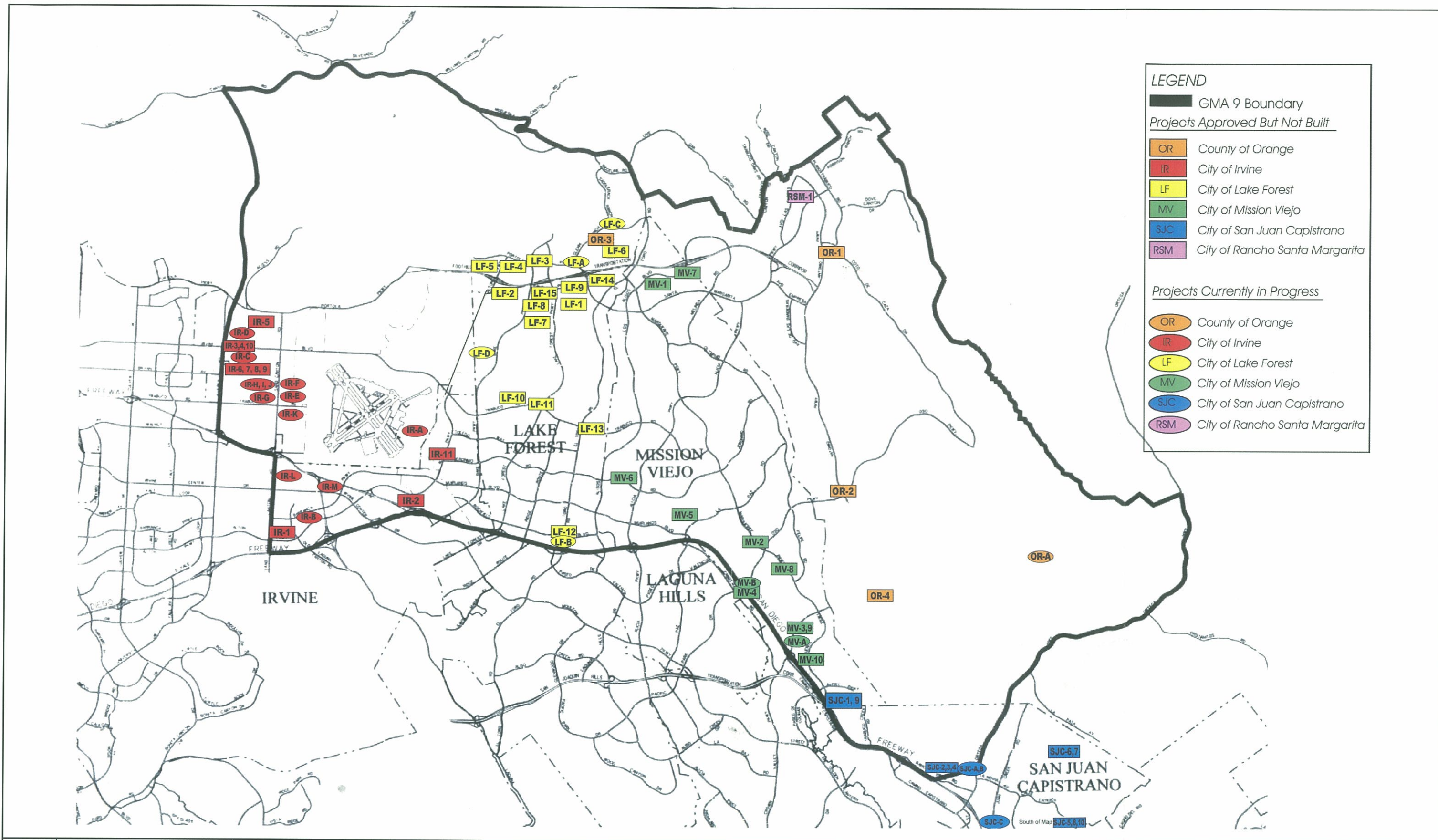


FIGURE 1-1
Land Use Coordination Map

SECTION 5 LONG-TERM IMPLICATIONS OF THE PROPOSED PROJECT

5.1 IRREVERSIBLE ENVIRONMENTAL CHANGES WHICH WOULD BE INVOLVED SHOULD THE PROPOSED ACTION BE IMPLEMENTED

The proposed Alton Parkway extension would close a gap in a major arterial highway, thereby connecting Irvine Boulevard with SR-241. Approval of the Project would facilitate improved access to the approved Baker Ranch Planned Community, Foothill Ranch, and undeveloped areas to the east. Significant irreversible environmental changes associated with project implementation would include: converting the land to road uses and altering natural landscape with construction materials such as concrete and asphalt.

If the project were approved, the Project would also result in a commitment of non-renewable and slowly renewable resources associated with construction activities. Non-renewable resources (primarily in the form of fossil fuels) include fuel oil, natural gas, and gasoline for automobiles. The use of other non-renewable and slowly renewable resources as a result of the project includes, but is not limited to, the following: sand and gravel, asphalt, and water. An increased amount of public maintenance services would also occur if the Project were implemented.

5.2 GROWTH-INDUCING IMPACTS

A project is considered growth-inducing if it can foster economic or population growth or construction of additional housing, either directly or indirectly, in the surrounding environment (as defined in the CEQA Guidelines, Article 9, Section 15126[f]). Included in this definition are projects that would remove obstacles to population growth. Examples of growth-inducing actions include extension of urban services into a previously unserved area, extending a major roadway into a previously unserved area, and establishing major new employment opportunities. The characteristic of some projects that may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively, would be considered growth-inducing.

When considering growth-inducing impacts, it is important to consider the context and historical trends of the area. Many factors can affect the amount, location, and rate of growth in south Orange County and the region in general. These include market demand for housing, employment, and commercial services; the acknowledged desirability of climate and living/working environment and commercial economy; availability of other services/infrastructure; and land use and growth management policies of the local jurisdictions.

Orange County has experienced significant growth in population over the past 50 years. Population in the county has increased from 216,224 (OCP-2004) in 1950 to 2,846,289 in 2000 (US Census Bureau 2000), an over ten-fold increase. Concurrent with significant increases in population, the economic character of Orange County has dramatically changed. The predominately rural/agricultural character of Orange County has changed to a diversified commercial/industrial economy. Technology industries; biomedical facilities; retail/commercial; light manufacturing; administrative; financial services; and tourism have become major components of the County economy. In 1965, the employment-to-population ratio was 22 percent. By 2000, the ratio had increased to 53 percent countywide. Not only had the proportion of jobs to residents increased, but it was also based on a dramatically larger population.

For purposes of this evaluation the growth-inducing effects of the Proposed Project are evaluated in three ways: (1) the effect on undeveloped land that may not be designated on any general plan for urban development, but would nonetheless experience increased growth pressure due to the

presence of the project; (2) the effect the project may have by removing constraints, thereby facilitating the construction of previously approved projects; and (3) the potential the project may have to influence redevelopment of areas at a higher intensity than that which currently exists.

The Proposed Project would not have a significant, direct, growth-inducing effect on land that is not currently designated for urban development. With the exception of land within the Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP) Reserve, the project site is surrounded by land that is currently designated on local General Plans and zoning maps for urban development or public use. The NCCP/HCP Reserve area will be maintained in permanent open space for protection of wildlife and sensitive habitat. The construction of Alton Parkway would not influence the growth in the NCCP/HCP area and is defined as a planned activity by the NCCP/HCP. Alton Parkway would improve access to the City of Irvine's Great Park. While Alton Parkway does not propose any new land uses or directly open land that is currently not slated for urban development, it would incrementally help remove an existing constraint to development of the Great Park. However, it should be noted that the need for Alton Parkway was established two decades prior to the Great Park; it has been on the Master Plan of Arterial Highways (MPAH) since 1981. Alton Parkway's overall influence on the growth of the surrounding area would not be significant.

Another consideration is the growth-facilitating effect of the Proposed Project. The proposed Alton Parkway alignment would provide improved access to the Baker Ranch Planned Community. Baker Ranch is approved for approximately 370 acres of commercial and industrial uses. Originally approved by the County of Orange in 1981 and subsequently annexed to the City of Lake Forest, Baker Ranch has entered into a development agreement with the City of Lake Forest. The development agreement ties the phasing of development with the implementation of infrastructure. The construction of Alton Parkway is an important component of that agreement and the development of Baker Ranch. The segment of Alton Parkway from Irvine Boulevard to Commercentre Drive must be under construction prior to the issuance of building permits for further development on Baker Ranch. Since it is a condition of development, Alton Parkway would facilitate the growth on Baker Ranch. While the project would help to facilitate the development of Baker Ranch, the growth-inducing impacts would not be considered significant because this development has been planned for and incorporated into the local growth projections. The environmental effects, including the growth-inducing impacts associated with Baker Ranch were evaluated by the County of Orange in EIR 260 when the project was approved in 1981 and in subsequent documentation approved by the City of Lake Forest in 1991.

There is minimal likelihood that the project would result in any substantial redevelopment of the area. The areas surrounding the project site have been developed with commercial and industrial uses and are relatively new (past 20 years). The project would not require property acquisitions that would result in residual parcels that would be available for redevelopment. Once constructed, Alton Parkway would not have excess capacity that would provide an incentive for redevelopment of surrounding uses to higher densities. In fact, additional circulation improvements would be required if redevelopment were proposed within the area. It is unlikely that the proposed Alton Parkway would likely be sufficient incentive for the area to redevelop at substantially higher densities; there are no readily apparent locations for the redevelopment to occur.

5.3 **CUMULATIVE IMPACTS**

In accordance with Section 15130 of the CEQA Guidelines, this section addresses the cumulative impacts that may occur if the Proposed Project were implemented. The CEQA Guidelines defines cumulative projects as other past, present, or reasonably foreseeable future actions that may result in similar impacts as the Proposed Project. Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other

environmental impacts. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Potential cumulative impacts resulting from the Proposed Project in conjunction with other related projects are expected to affect developed and undeveloped areas located in the cities of Lake Forest and Irvine, as well as unincorporated portions of Orange County. Existing, approved, and reasonably anticipated future infrastructure or development projects in the vicinity of the project site that are closely related to the Proposed Project and that have additive effects on the environment and infrastructure systems in the vicinity of the project site are considered in this section. These projects are separate from the proposed action. Analysis of the environmental impacts of other projects has been or will be conducted separately with the results incorporated into documents prepared specifically for those projects.

The evaluation of the cumulative impacts is twofold. The analysis considers specific projects as well as implementation of the local General Plans. This approach allows the analysis to consider known impacts associated with specific projects and present a comprehensive understanding of future development patterns in the general project vicinity. The following section discusses existing and proposed land developments that are located in the vicinity of the Proposed Project and that would have cumulative effects on the environment in the direct vicinity of the project study area when considered in combination with the implementation of Proposed Project. Potential impacts are identified from the environmental documentation prepared for the projects and are based on implementation of the entire project; however, in many cases the project has already been partially or fully implemented. Therefore, determinations of potential impacts indicated in these documents may overstate the expected magnitude of future impacts. The level of detail provided in the following discussion varies based on the information available. The projects evaluated for cumulative impacts include the following, with the discussion of impacts below:

- Baker Ranch, Portola Hills South, and City of Lake Forest Opportunities Study
- Crown Valley Parkway Bridge
- James A. Musick Branch Jail Expansion
- Ladera Ranch Planned Community and Antonio Parkway Extension
- Northern Sphere Project
- Orange County Great Park
- South Orange County Transportation Infrastructure Improvement Program: Foothill Transportation Corridor-South
- Rancho Mission Viejo: The Ranch Plan

5.3.1 CUMULATIVE PROJECT DESCRIPTIONS

Baker Ranch, Portola Hills South, and City of Lake Forest Opportunities Study

Two different land use concepts have been proposed for 838 acres of non-contiguous properties in the City of Lake Forest: (1) development under the existing Lake Forest General Plan, which includes vested entitlements (through development agreements) for Baker Ranch and Portola Hills South, and (2) the City of Lake Forest Opportunities Study. Baker Ranch is currently entitled; however, if the City of Lake Forest Opportunities Study is approved, it will replace Baker Ranch and Portola Hills South. The following provides a summary of each:

Baker Ranch and Portola Hills South

The Baker Ranch project consists of four properties (Parcels 1, 2, and 3; Lot 22 of Parcel 4) located in the City of Lake Forest in southeastern Orange County. Several planning documents have been processed for the site.

In 1981, EIR 260 was prepared and certified for Parcels 2 and 4 to permit industrial, community commercial, and open space uses. Parcel 4 received: approval of a tentative parcel map in 1983; a Conditional Use Permit allowing recreational vehicle storage on a portion of Parcel 4 in 1984; and a vesting tentative map in 1988. EIR 403 was certified in 1982 for Parcels 1 and 3 to permit community commercial, industrial, and open space uses with a "Planned Community" zoning designation. In 1983, the County of Orange initiated a change in the General Plan land use designation to "Urban Activity Center" for a large area in North El Toro, including Parcels 1, 2, 3, and 4.

In 1988, the County of Orange approved the Baker Ranch Planned Community Development Plan and Supplemental Text, the Baker Ranch Area Plan and a Development Agreement, which provided for the development of the approximately 370-acre Baker Ranch property. The Development Agreement permits and vests the development of Baker Ranch for community commercial, industrial, and open space uses until the year 2008. In 1991, Baker Ranch was incorporated into the City of Lake Forest. Because of the incorporation of the City, the Baker Ranch Development Agreement was subject to early termination on December 21, 1999 (pursuant to Government Code, Section 65865.3). The City temporarily extended this Agreement in accordance of that law. As approved, the Baker Ranch project would provide 4,865,000 square feet of business park development.

The Portola Hills South project would occur in the City of Lake Forest at Glenn Ranch Road and Saddleback Ranch Road. It would allow up to 2,271,654 square feet of business park and 554,500 square feet of commercial development.

At the time of the incorporation of the Baker Ranch Planned Community with the City of Lake Forest, the following potential environmental impacts were identified (it should be noted that, due to the similarities between the Baker Ranch and Portola Hills South projects, they would be expected to result in similar impacts):

- **Aesthetics:** Permanent regional viewshed alteration from agricultural to urban uses would occur.
- **Air Quality:** Air emissions from the Baker Ranch project at its build-out date estimated at 0.13 percent of the South Coast Air Quality Management Board's emissions and 0.74 percent of the County's emissions.
- **Cultural Resources:** Potential impacts to subsurface archaeological and paleontological resources may occur.
- **Geology/Soils:** There would be removal of prime agricultural soils within the study area. There would also be an increase in the potential for erosion by surface wind and water.
- **Hydrology:** There would be modification of the existing streambeds and floodplains throughout the site. Alteration of existing storm runoff volumes, velocities and drainage patterns, and the introduction of impervious surfaces have reduced permeable acreage. There would be long-term urban pollution discharge impacts to the project area and downstream.
- **Land Use:** There would be loss of open space and prime agricultural lands as a result of project implementation, and there would be increased pressure on the Aliso Ranch to convert from agricultural to urban use.

- **Landform/Topography:** There would be permanent alteration of most of the terrain in the study area, including streambed alteration and landform alteration.
- **Noise:** There would be elevated ambient noise levels in and around the Baker Ranch area as a result of increased traffic volume.
- **Transportation/Traffic:** There would be required construction of new roadway facilities including Alton Parkway, Lake Forest Drive, and the Foothill Transportation Corridor.

City of Lake Forest Opportunities Study

A Program EIR for the Opportunities Study project circulated for public review from January 31 to March 27, 2006. The Opportunities Study project includes 5,415 residential units; 648,720 square feet of commercial development; over 50 acres of neighborhood parks; 45 acres of public facilities (sports park and Community Center/Civic Center); and 4,865,000 square feet of business park. The Opportunities Study has also reserved a potential elementary school site on the Shea-Baker property should Saddleback Valley Unified School District choose to build a new school. The Opportunities Study assumes the extension of Alton Parkway between Towne Centre Drive and Commercentre Drive as a committed roadway improvement and includes the construction of traffic improvements to existing intersections that will be impacted by the Opportunities Study project.

The expected environmental impacts of the Opportunities Study project, as described in the program EIR, which are considered to be pertinent to the Alton Parkway extension evaluation of cumulative impacts, are as follows:

- **Agricultural Resources:** The project would result in the conversion of Prime Farmland and Unique Farmland to nonagricultural uses.
- **Air Quality:** The project would provide new sources of regional air emissions and would expose sensitive receptors to substantial pollutant concentrations (i.e., emissions levels greater than SCAQMD's thresholds of significance). In addition, the project could result in a cumulative considerable net increase of criteria pollutants for which the region is in non-attainment, specifically ozone, particulate matter (PM10), and carbon monoxide (CO).
- **Biological Resources:** The project could have a substantial adverse effect on species identified as candidate, sensitive, or special-status species. In addition, it could have a substantial adverse effect on riparian habitat or other sensitive natural communities as well as federally protected wetlands, as defined by Section 404 of the Clean Water Act.
- **Cultural Resources:** The project would result in the possibility of impacts to archaeological and paleontological resources. Adherence to specific mitigation measures would reduce these impacts to a less-than-significant level.
- **Hazards and Hazardous Wastes:** Site 1 of the project is located within an area that is included on a list of hazardous materials sites compiled pursuant to *Government Code*, Section 65962.5. Therefore, implementation of the project could include activities that result in the release of hazardous materials into the environment during construction. In addition, the project could create significant hazards to the public or the environment and result in hazardous emissions from the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- **Hydrology and Water Quality:** The project could increase the amount of runoff from some sites, thereby affecting downstream facility capacity and altering the 100-year floodwater

surface elevation. It could also adversely alter an existing drainage pattern or watercourse. In addition, the project would affect water quality of receiving waterbodies by introducing runoff from urban-related uses.

- **Noise:** Construction of the proposed project could expose people to excessive groundborne vibration or groundborne noise levels. The project could also result in a substantial permanent increase in ambient noise levels.

Crown Valley Parkway Bridge

Crown Valley Parkway was recently widened to seven lanes across the Arroyo Trabuco within the City of Mission Viejo and in unincorporated Orange County. The following potential environmental impacts were identified in the EIR associated with construction of the project:

- **Aesthetics:** The proposed project would alter viewsheds. Mitigation measures for biological resources would help to minimize visual intrusion of the project and reduce any impact to a level considered less than significant.
- **Air Quality:** The project would result in short-term, construction-related emissions that exceed SQAMD thresholds. The level of impact would remain significant after mitigation.
- **Biological Resources:** The removal of up to 11.8 acres of habitat, which includes 2.83 acres of Venturan-Diegan Transition coastal sage scrub, 2.96 acres of annual and ruderal grasslands, 0.98 acre of Southern Coastal Needlegrass Grassland, and 4.4 acres of riparian communities would be a significant impact. Construction activities would have adverse impacts on water quality; affect four pairs of coastal California gnatcatchers and two least Bell's vireo; and remove suitable habitat for nesting and foraging for a variety of raptor species. Mitigation would involve placing a conservation easement over coastal sage scrub occupied by the California gnatcatcher, reseeding the abutment slopes, replacing riparian habitat, developing erosion- and sediment-control measures, and surveying the project site prior to construction for the presence of active nests. The level of significance after mitigation would be less than significant for all biological impacts.
- **Cultural Resources:** The project would result in the possibility of impacts to archaeological and paleontological resources. Adherence to specific mitigation measures would reduce these impacts to a less-than-significant level.
- **Geophysical:** The abutment for the bridge structure would be exposed to rainfall and possible erosion until the ultimate project is constructed. Mitigation would reduce these impacts to a level considered less than significant.
- **Land Use:** The project would impact the slopes of the common property for the Cordova Canyon homeowners association and parcels owned by the Mission Viejo Company and Santa Margarita Company. Implementation of project-specific mitigation measures would reduce any impact to a level considered less than significant.
- **Noise:** The long-range traffic volumes utilizing the Crown Valley Parkway Bridge would result in noise levels in excess of County standards at the All Bright Preschool on Crown Valley Parkway. Mitigation would include provisions for an 8-foot wall near the daycare center, thereby reducing impacts to a level considered less than significant.
- **Public Services and Facilities:** Construction activities for the project would result in the possible need for detours or blocked access points resulting in temporary delays for

emergency services. Development of a construction phasing and a detour plan would be submitted to the Orange County Fire Authority (OCFA) and the Sheriff's Department to mitigate any impacts to a level considered less than significant. The project would possibly impact an existing electrical line within the area. Coordination with San Diego Gas and Electric regarding possible relocation of the existing 12 kV lines would reduce any impact to a level considered less than significant.

James A. Musick Branch Jail Expansion

The James A. Musick Jail facility encompasses approximately 104.5 acres and is located within unincorporated Orange County directly east of the Alton Parkway extension project. The expansion project would increase the existing jail population (of approximately 1,200 inmates) to a capacity that houses 7,584 inmates, including those accommodated in medical beds. The facility will also change from a minimum security facility to an all classification (minimum/medium/maximum) security facility. Male and female inmates will be accommodated, and booking and release of inmates is also proposed.

As stated earlier in this document, cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The potential environmental impacts identified for the Musick Jail Expansion project follow:

- **Aesthetics:** The James A. Musick Expansion would alter viewsheds. Mitigation measures would reduce visual impacts to a level considered less than significant.
- **Agricultural Resources:** Loss of over 33 acres of Prime Farmland would occur.
- **Air Quality:** The air quality threshold would be exceeded during construction activities.
- **Biological Resources:** There will be the loss of the riparian area in the Borrego Wash and small exotics area in the southwestern corner of the site. The impact will be reduced to a level of insignificance via mitigation.
- **Hazards:** Hazardous materials have been identified on the site but would not interfere with the development of the site.
- **Hydrology/Water Quality:** There will be increased urban runoff during construction activities.
- **Land Use:** The project may serve as a stimulus for undesirable land use in surrounding areas.
- **Noise:** Short-term construction noise may exceed established thresholds.
- **Public Services and Utilities:** There would be an increased demand for public safety personnel.
- **Transportation/Traffic:** Alton Parkway between Jeronimo and Muirlands, and Alton Parkway between Muirlands and the I-5 would experience interim year impacts, while Alton Parkway between Jeronimo and Muirlands and Alton Parkway between Rockfield and the I-5 would be experience long-term impacts. These impacts, however, can be reduced to a level of insignificance with standard mitigation measures.

Ladera Ranch Planned Community and Antonio Parkway Extension

The Ladera Ranch Planned Community and Antonio Parkway extension projects were examined simultaneously because they are closely related. The Antonio Parkway extension was proposed to serve as the primary access roadway to the Ladera Ranch Planned Community, located on either side of the extension. Both projects were evaluated in the same EIR and were approved concurrently. The Antonio Parkway extension has been constructed and the Ladera Ranch Planned Community is partially constructed.

Ladera Ranch Planned Community

The Ladera Ranch Planned Community project, evaluated in EIR 555 and currently under construction, is located south of the Las Flores Planned Community, west of Chiquita Ridge, and east of the Crown Valley Parkway Bridge. The project is planned for 8,100 housing units; 25 acres of commercial and industrial uses; 1,600 acres of open space; 59 acres of parks and public facilities; and 11 acres of urban activity center. Currently, over half of this project is built. All mass grading is complete. The EIR identified the following as significant impacts:

- **Aesthetics:** Project implementation would alter the views of the surrounding areas during construction; however, the uses proposed would be a continuation of surrounding development. No significant impacts were identified.
- **Air Quality:** Construction impacts for CO, NOx, PM10, and ROC would exceed SCAQMD thresholds. Regional mobile source emissions would result in significant increases in emissions for CO, NOx, ROC, and PM10. Implementation of measures in compliance with SCAQMD Rules 402 and 403 would reduce construction emissions and fugitive dust, and the implementation of a transportation demand management plan for the urban activity center would identify project trip reduction strategies thereby reducing employee-related trips by 15 percent. Impacts would continue to remain significant after these measures are implemented.
- **Biological Resources:** Project development would result in the loss of 2,244.40 acres of annual grassland and 61.44 acres of coastal sage scrub (39.83 acres attributed to the land development area and 21.61 acres as roadway impacts). This would substantially affect several sensitive raptor species, as well as several sensitive bird and reptile species. This would remain a significant impact that can only be partially mitigated through the permanent preservation protection of an area of approximately 1,600 acres of natural habitat preserved in permanent open space. Impacts associated with the loss of natural habitat would include displacement of wildlife, habitat fragmentation, and the loss of habitats that support sensitive wildlife species.
- **Cultural Resources:** The project has the potential to directly affect 18 known cultural resource sites. There is also the potential for four sites to be indirectly affected. Impacts would be reduced to levels considered not significant through implementation of standard conditions of approval.
- **Geophysical:** Geotechnical constraints were identified as a significant potential impact. Compliance with the grading code, Uniform Building Code, and Standard Conditions of Approval would reduce the impacts to less than significant. However, the project would have significant landform alteration impacts because of the cuts and fills necessary to alleviate geological instabilities within the development areas. Landform alteration was identified as a significant unavoidable impact.

- **Hydrology and Water Quality:** Construction activities would increase the amount of erosion on site thereby increasing sedimentation in Trabuco and San Juan creeks. Construction equipment would also increase the chance of toxins entering the creeks. While compliance with the requirements of National Pollutant Discharge Elimination System (NPDES) stormwater permits, the Orange County Drainage Area Management Plan and specific requirements of the County's stormwater permits would be mandatory, the level of significance would remain potentially significant after mitigation. However, the project would be in full compliance with federal, state, and local water quality programs, and an urban runoff management plan was prepared to reduce the impacts to the extent feasible.
- **Land Use:** Project implementation would result in the conversion of almost 50 percent of undeveloped and low-intensity uses to high-intensity urban uses. Even though mitigation would provide for the preservation of approximately 1,600 acres for open space surrounding the development area, the level of significance after mitigation would remain significant.
- **Noise:** There would be short- and long-term noise impacts associated with project development. Compliance with the Noise Ordinance and participation on a pro-rata share for a noise mitigation program would reduce the impacts to a level considered less than significant.
- **Public Health and Safety:** Potential impacts to construction workers, if there were unauthorized releases from the two underground jet fuel pipelines that traverse the land development area, was identified in the EIR. These impacts would be reduced to a level considered not significant via well-abandonment documentation prior to the issuance of a grading permit; testing conducted for the potential of methane gas migration within 300 feet of any oil prior to the issuance of a grading permit; and the submission of a design for barriers to public access to any exploratory oil wells.
- **Public Services, Utilities, and Energy:** Project development would have a potential to affect both fire protection services and emergency response times due to the increase in emergency calls. Impacts would be reduced to a level considered not significant as a result of an agreement with the County to contribute on a pro-rata share for the provision of a new fire facility. Impacts to schools, libraries, and other public services would be reduced to less than significant through implementation of standard conditions of approval and implementation of a cooperative agreement with the Capistrano Unified School District.
- **Transportation/Traffic:** There would be 16 intersections operating at a deficient LOS in the year 2020, 13 of which are significant project-related impacts. In the year 2000, there would be four project-related deficient intersections. The project applicant would pay a pro-rata share for improvements at intersections that are deficient without the project and provide improvements to intersections that would experience unacceptable LOS due to project impacts. The level of significance after mitigation would remain significant.

Antonio Parkway (Oso Parkway to Southern Boundary of Ladera Ranch)

This project, recently completed, widened Antonio Parkway from Oso Parkway to the southern boundary of Ladera Ranch to six lanes. EIR 555 addressed the construction of Antonio Parkway to its ultimate six lane configuration, in conjunction with the development of the Ladera Ranch Planned Community. A four-lane facility from Oso Parkway to Ortega Highway was constructed as part of the initial phase of the project. Grading for the ultimate facility was completed as part of the initial phase of construction. Impacts associated with the roadway are within the impacts identified as part of Ladera Ranch.

Northern Sphere Project

The City of Irvine approved a land use plan within the City's northern sphere of influence. The area is approximately 3,500 acres bound by Portola Parkway, the Foothill Transportation Corridor (SR-241), the former El Toro Marine Corp Air Station (MCAS), Trabuco Road, and Jeffrey Road. The project includes the development of approximately 12,350 dwelling units; 730,000 square feet of retail uses; 6,566,000 square feet of Research and Industrial facilities; and approximately 4,650 acres of open space.

There will be significant unavoidable impacts as a result of the implementation of this project. The following impacts have been identified as pertinent for the Alton Parkway extension evaluation of cumulative impacts:

- **Agricultural Resources:** Impacts would occur as a result of the conversion of approximately 3,100 acres of prime farmland, farmland of statewide importance, and unique farmland to non-agricultural uses.
- **Air Quality:** Construction equipment exhaust emissions would be significant for all air pollutants in the first construction phase, and for NOx and PM10 in the second construction phase.
- **Transportation/Traffic:** Potential impacts to the freeway/tollway mainline segments and ramps may occur.

Orange County Great Park

This project would develop residential, open space, recreation, research and development, and tourist uses. The proposed project is located in the center of Orange County on the site of the former MCAS El Toro and would create 3,625 dwelling units; 6,585,594 square feet of commercial and industrial uses; and 2,583 acres of open space. The EIR for the project has been completed but is under litigation. Annexation of the land to the City of Irvine has been recorded. The following impacts were identified in the EIR:

- **Aesthetics:** Project implementation would lead to significant impacts if light sources were directed into or near residential uses and create new sources of glare. Mitigation would reduce these impacts to a level considered less than significant.
- **Agricultural Resources:** Project impacts would convert 575 acres of Prime Farmland, 63 acres of Unique Farmland, and 46 acres of Farmland of Statewide Importance to non-agricultural use and would involve changes in the existing environment, which could result in conversion of existing farmland to non-agricultural use. These impacts cannot be completely mitigated and would be considered significant and irreversible.
- **Air Quality:** The project would result in significant impacts associated with fugitive dust, motor vehicle emissions, and construction emissions. Development impacts cannot be completely mitigated as they are significant unavoidable impacts.
- **Biological Resources:** The project would result in fragmentation of habitat and to wetland habitat, cause destruction and/or damage to trees, and conflict with the City of Irvine's Urban Forestry Ordinance. Adherence to the mitigation program, which includes the Habitat Preserve, would reduce these impacts to a less-than-significant level.

- **Cultural Resources:** The project may substantially impact an archaeological resource or uncover previously unknown human remains. These impacts would be considered less than significant via adherence to standard mitigation measures. The project would have the potential for disturbing resources such as Pleistocene terrestrial vertebrates as well as resources in the coastal plain and washes in the northeastern, northwestern, and southern portions of PA 51. These impacts would be reduced to a less-than-significant level via the implementation of standard mitigation measures.
- **Geophysical:** The project would result in the potential for seismic impacts such as groundshaking, expansive soils, soil erosion, and the loss of topsoil. These impacts would be reduced to a less-than-significant level via the implementation of mitigation measures.
- **Hydrology/Water Quality:** Project impacts would include wind and water-related erosion; violation of water quality standards and waste discharge standards; an increase in surface runoff; and an increase in flooding. Mitigation measures, Best Management Practices (BMPs), and Project Design Features would reduce these impacts to a level considered less than significant.
- **Population and Housing:** A significant impact to the jobs/housing ratio would occur. No mitigation would be available to rectify this impact, and it would remain a significant and unavoidable impact.
- **Public Health and Safety:** Project impacts would include construction activities resulting in the possible disturbance of structures and soils that contain asbestos-containing materials and lead based paint. Additionally, both population and structures would be adjacent to a high fire risk area. Mitigation measures would reduce these impacts to a less-than-significant level.
- **Public Services and Facilities:** The project would have the potential for impacts associated with the construction and operation of public facilities, police services, fire and emergency services, parks and recreation, and school services. It presents the possibility of impacts related to the construction of new potable water facilities, recycled water facilities, new wastewater facilities, new solid waste facilities, and new energy and communication facilities. These impacts would be reduced via mitigation measures that would reduce impacts to levels considered less than significant.
- **Transportation/Traffic:** The project would cause a substantial increase in traffic and street capacity over existing conditions. Mitigation measures would reduce impacts to less-than-significant levels.

South Orange County Transportation Infrastructure Improvement Program: Foothill Transportation Corridor-South

The approved Preferred Alternative for Foothill Transportation Corridor-South (FTC-S) is a limited access highway that would extend the existing SR-241 (FTC-N) south from its existing southern terminus at Oso Parkway to I-5 in the vicinity of the Orange/San Diego County line. It would be approximately 26 km (16 mi) long including approximately 1.3 km (0.8 mi) of improvements on the I-5. The proposed facility includes four general-purpose lanes, two in each direction, for the entire length of the corridor. Two additional lanes would be added in the future as traffic conditions warrant. Key components of the Preferred Alternative include continuous mainline travel lanes and ramps south of Oso Parkway, several wildlife structures/bridges to facilitate wildlife movement, and an approximately 2,100-foot bridge structure crossing San Juan Creek, a toll plaza north of Ortega Highway, ramp toll plazas at Cow Camp Road and Avenida Pico, an approximately 2,859-foot

elevated bridge structure spanning San Mateo Creek and the I-5 (which will provide a direct connection to I-5), and reconstruction of the existing I-5 Basilone Road interchange.

The expected environmental impacts of the proposed FTC-S project considered to be pertinent to the Alton Parkway extension evaluation of cumulative impacts are as follows:

- **Aesthetics:** The Preferred Alternative would result in significant aesthetic impacts by altering the visual quality of the area. The Preferred Alternative would result in substantial amounts of grading, removal of vegetation, and construction of an urban component in areas that are currently undeveloped. This would change the visual character and setting of the area.
- **Agricultural Resources:** By converting farmland to non-agricultural use and conflicting with the Williamson Act, the Preferred Alternative would result in significant impacts to farmland.
- **Air Quality:** The Preferred Alternative would result in significant hydrocarbon (HC), carbon monoxide (CO), nitrogen oxide (NOx), and fine particulate matter (PM10) air quality impacts during construction. Similarly, the Preferred Alternative would result in significant CO and NOx impacts during operations.
- **Biological Resources:** The Preferred Alternative would result in significant unavoidable impacts to wildlife and vegetation as well as threatened and endangered species.
- **Cultural Resources:** The Preferred Alternative would potentially have a significant adverse impact on cultural resources. Because of the extensive amount of earth-moving activities that would be required for the construction, the Preferred Alternative could result in potentially significant adverse impacts to archeological resources.
- **Hydrology/Water Quality:** The Preferred Alternative would result in significant adverse impacts due to encroachment of roadway elements on the Cañada Chiquita floodplain. In addition, the Preferred Alternative would have the potential of having water quality impacts associated with pollutants in runoff from the roadway. However, current regulations require that the water be treated prior to release into downstream waters; therefore, potentially significant short-term adverse impacts to water quality would be mitigated to below a level of significance.
- **Land Use:** By requiring the temporary use of land to accommodate construction-related activities, conflicting with adopted land use plans, and dividing existing communities, the Preferred Alternative would result in significant unavoidable adverse impacts with respect to land use.
- **Military Impacts:** The Preferred Alternative would result in significant unavoidable impacts on military operations on Marine Corps Base Camp Pendleton. This alignment traverses San Onofre State Beach, which is leased from the Department of the Navy. The roadway would sever this acreage from the remainder of the base, which could result in limitations on the future effectiveness of those acres for military training operations.
- **Noise:** Implementation of the mitigation measures identified in the South Orange County Transportation Infrastructure Improvement Project (SOCTIIP) EIS/Supplemental EIR (SEIR) would reduce construction-related impacts for the Preferred Alternative to a level considered less than significant. All the long-term significant adverse noise impacts associated with the Preferred Alternative could be reduced to below a level of significance with implementation of the mitigation measures discussed in the SOCTIIP EIS/SEIR. However, if mitigation is not

implemented at any location, there would be a significant adverse noise impact at that location.

- **Recreation:** The Preferred Alternative would result in adverse impacts on one or more existing and/or planned recreation resources, which cannot be mitigated to below a level of significance because the Preferred Alternative would result in visual, air quality, transportation, or noise impacts that could reduce individuals' enjoyment of recreation facilities. In addition, the Preferred Alternative would result in the acquisition of recreation lands.
- **Socioeconomic Impact:** The Preferred Alternative would not result in adverse impacts related to Environmental Justice; however, the Preferred Alternative would result in unavoidable adverse impacts related to socioeconomics by displacing residential and/or commercial uses and inducing growth.

Rancho Mission Viejo: The Ranch Plan

The approximately 22,815-acre Rancho Mission Viejo (the "Ranch Plan") project site is located in southeastern Orange County and constitutes the remaining undeveloped portions of Rancho Mission Viejo (RMV) located within unincorporated Orange County. The Ranch Plan includes up to 14,000 dwelling units and other uses within a development area of approximately 5,873 acres. Approximately, 6,000 of the 14,000 dwelling units would be senior housing. The remaining 16,942 acres within the project site would be retained in open space. Development is proposed to occur over a period of approximately 20 to 25 years. Infrastructure would be constructed to support all of these uses, including road improvements, utility improvements, and schools. Ranching and agricultural activities would be retained within a portion of the proposed open space area.

The Ranch Plan Final Program Environmental Impact Report No. 589 was certified by the Orange County Board of Supervisors on November 8, 2004, as adequately addressing the potential environmental impacts associated with the development of the RMV Planning Area, a 22,815-acre Planned Community allowing for the development of 14,000 dwelling units and 5,200,000 square feet of employment uses.

The expected environmental impacts of the proposed Ranch Plan project (described in FEIR 589), considered to be pertinent to the Alton Parkway extension evaluation of cumulative impacts, are as follows:

- **Aesthetics:** Grading activities would significantly alter the existing visual characteristics and topography of the site. The open space appearance of the predominantly undeveloped portion of the RMV Planning Area would be irreversibly lost; this significant impact is unavoidable. After mitigation, there would also be incremental increases in light levels that are considered significant and unavoidable.
- **Agricultural Resources:** Development of the project would result in a significant, unavoidable impact associated with the loss of Important Farmland.
- **Air Quality:** Short-term, construction-related emissions of NO_x, CO, VOC, and PM₁₀ generated during the peak construction period would remain significant after mitigation. Long-term operational emissions of CO, VOC, NO_x, and PM₁₀ would remain significant and unavoidable. The project would not result in significant local operational air quality effects.
- **Biological Resources:** The project could have substantial adverse impacts on candidate, sensitive, or special-status plant and animal species and may result in impacts to wildlife

movement and/or habitat linkage. Implementation of the Ranch Plan could have a substantial impact on woodland, grassland, riparian habitats, coastal sage scrub, and other sensitive natural communities as well as federally protected wetlands, as defined by Section 404 of the Clean Water Act.

- **Cultural Resources:** The project would have a significant impact on historic sites in the project area, which have been determined to be eligible or potentially eligible for the National Register of Historic Places and the California Register of Historic Resources. With adherence to mitigation measures, impacts on cultural resources would be reduced to a level considered less than significant.
- **Geophysical:** The Ranch Plan would be subject to ground shaking associated with seismic activity; has the potential to expose persons and structures to on-site landslides; contains areas with compressible and expansive soils; would expose soils to erosion from grading; contains areas of shallow groundwater; and would make development susceptible to liquefaction. However, geotechnical impacts can be mitigated to a level considered less than significant.
- **Hazards:** Because of past and present activities within the project area, there is a potential for hazardous materials to be present. With implementation of mitigation measures, potential impacts associated with hazards and hazardous materials would be reduced to a level considered less than significant.
- **Hydrology/Water Quality:** Development of the Ranch Plan would result in a significant, unavoidable impact by contributing to high levels of pathogen indicators. There are no feasible mitigation measures that would reduce this impact to less than significant. All other impacts are reduced to a level considered less than significant.
- **Land Use:** The Ranch Plan would provide approximately 68 percent of the development assumed in local and regional planning documents for the area. This could ultimately result in a shortfall in the amount of housing available in the Southern California Association of Governments (SCAG) region and contribute to a long-term regional housing deficit. This inconsistency with local and regional planning projections is an unavoidable, significant impact.
- **Mineral Resources:** Two areas of significant mineral resources are within the project limits. The ability to extract the resources in these areas would be lost. This is considered an unavoidable, significant impact.
- **Noise:** Development of the Ranch Plan would result in short-term, construction-related noise impacts; the project's contribution to cumulative noise would result in significant traffic noise impacts; and on-site activities could result in significant noise impacts thereby impacting sensitive receptors. However, noise impacts can be mitigated to a level considered less than significant.
- **Public Services and Utilities:** Development of the Ranch Plan would result in significant impacts associated with fire protection services. Other impacts would be reduced to less than significant with mitigation measures. The project could have substantial adverse impacts on utilities and services systems; however, adherence to mitigation measures with implementation of the project would not result in any significant unavoidable impacts associated with utilities and service systems.

- **Transportation/Traffic:** Buildout of the Ranch Plan project under the Year 2025 + Project Buildout traffic scenario would result in significant cumulative impacts to study area intersections, freeway ramps, and freeway mainline segments. The Short-Range (Year 2010) + Project traffic scenario would result in significant project-related impacts to study area intersections and freeway ramps.

5.3.2 CUMULATIVE IMPACT EVALUATION

Quantification of cumulative impacts requires speculative estimates of impacts including, but not limited to, the following: the geographic diversity of impacts in the project vicinity (impacts of future development may affect different areas); variations in the timing of impacts (many of the project's future impacts, especially the short-term, construction-related impacts, would occur at different times, and would be reduced or removed before other short-term impacts occurred); complete data is not available for all future development; and data for future development may change during subsequent approvals. Therefore, much of the cumulative evaluation is a qualitative judgment regarding the combined effects of the relationship between the different land uses.

Aesthetics

Construction of currently approved and pending projects in the vicinity of the Proposed Project would permanently alter the nature and appearance of the area through the loss of undeveloped areas and through permanent alteration of viewsheds. As development occurs throughout the project area, residents and visitors in the area would notice the visual effects of urbanization. However, the significance of these visual/aesthetic changes is difficult to determine since aesthetic value is subjectively determined and potential impacts are site-specific.

Development of the proposed roadway alignment, as well as other local projects, would result in a decrease in the extent of open space and rural visual resources. In addition, as development continues, street lighting, vehicle lights, and building lighting would introduce light and glare impacts to the area. Cumulative light and glare impacts can be mitigated to less-than-significant levels with proper lighting techniques to direct light on site and away from adjacent properties. However, implementation of the Proposed Project would contribute to a significant and unavoidable impact to viewsheds within Orange County.

Agricultural Resources

The Proposed Project would result in the direct loss of 17 acres of Prime Farmland in addition to land set aside for the Musick Jail Facility for agricultural purposes. The loss of Important Farmland has also been identified with the James A. Musick Branch Jail Expansion (33 acres), Orange County Great Park (684 acres), Northern Sphere (3,100 acres), the Ranch Plan (827.2 acres), the Foothill Transportation Corridor-South (up to 400 acres), the Ladera Ranch Planned Community/Antonio Parkway (8 acres), and the City of Lake Forest Opportunities Study (432 acres). Mitigation measures have been incorporated into several of the cumulative projects to lessen this impact; however, mitigation will not make these impacts less than significant. Therefore, the Proposed Project would contribute to a significant and unavoidable cumulative impact with respect to agricultural resources.

Air Quality

Short-term air quality impacts would occur during grading and construction operations associated with the development of the Alton Parkway Extension. As discussed in Section 3.5, Air Quality, construction of the Proposed Project would result in significant unavoidable PM10 and NOx impacts that would affect workers and residents at the Musick facility. These impacts would be mitigated,

but not to a level considered less than significant, with implementation of the Mitigation Program presented in Section 3.5.3.

It is certain that construction activities for the Proposed Project will be underway at the same time as construction activities for Baker Ranch. It is also likely that other projects in the vicinity of the proposed Alton Parkway extension, such as The Great Park and the Musick Facility expansion, will be under construction at the same time as these projects. Therefore, it is assumed that construction of the Proposed Project would result in short-term cumulatively significant air quality impacts.

By reducing traffic congestion and vehicle miles traveled, the Proposed Project would contribute to a reduction in vehicular emissions. The Proposed Project would therefore have a beneficial impact with respect to cumulative long-term air quality in the project vicinity.

Biological Impacts

Section 3.7 identified potential project impacts to biological resources, including direct and indirect impacts to sensitive habitat that supports the least Bell's vireo, coastal California gnatcatcher, or nesting raptor species. Additionally, impacts associated with introduction of non-native species, night lighting, and increased human intrusion were identified as potentially significant impacts of the Proposed Project. However, with implementation of the recommended mitigation program, all impacts would be reduced to less than significant.

The potential for the Alton Parkway Extension Project to contribute to cumulative impacts on biological resources needs to be evaluated not only from the perspective of other cumulative projects, but also in light of the regional programs that have been established to address the cumulative impacts on biological resources. As Orange County has transformed from a rural to an urban environment, substantial loss in the amount and diversity of biological resources in the region has occurred. To address the continued loss of habitat, the NCCP was prepared to provide regional or areawide protection and perpetuation of natural wildlife diversity while allowing compatible and appropriate development and growth. As discussed in Section 3.7, the County of Orange, in conjunction with the state and federal resource agencies and other jurisdictions and landowners, prepared the NCCP/HCP for the Central/Coastal subregions. The Proposed Project is a planned activity under the NCCP, which means that the anticipated impacts associated with implementation of the Alton Parkway Extension have been incorporated and addressed in the NCCP/HCP baseline conditions (i.e., impacts have been documented through the NCCP database, and mitigation is documented through the already protected open space and NCCP measures).

The following cumulative projects which were identified for analysis in this EIR are also located within the Central/Coastal NCCP:

- Baker Ranch, Portola Hills South, and the City of Lake Forest Opportunities Study
- James A. Musick Branch Jail Expansion
- Northern Sphere Project
- Orange County Great Park/Heritage Fields

Each of these projects has either been assumed in the NCCP baseline or has had to demonstrate consistency with the provisions of the NCCP/HCP as part of its entitlement processing. By demonstrating consistency with the NCCP/HCP and implementing project specific mitigation measures, the cumulative impacts on covered species would be less than significant because the NCCP/HCP was developed to ensure that there would be sufficient protection of the species provided the growth was consistent with the program.

The remaining cumulative projects are located in the Southern Subregional NCCP/HCP planning area. Of these, Crown Valley Parkway Bridge has already been implemented and the Ladera Ranch Planned Community and Antonio Parkway Extension are nearly complete.¹ Project-specific mitigation measures were implemented with these projects to reduce significant impacts. However, habitat fragmentation and unavoidable significant impacts to grassland and coastal sage scrub were identified for Ladera Ranch.

The Ranch Plan and SOCTIIP have not yet been implemented. The Ranch Plan has been incorporated into many of the alternatives for the Southern Subregional NCCP/HCP, while SOCTIIP was addressed as a cumulative project and assumed in the impact assessment for the NCCP/HCP. The environmental documentation for both these projects identified significant unavoidable biological impacts. The Ranch Plan identified significant impacts to slope wetlands in Chiquita, two wildlife movement corridors, and a cumulative impact associated with pathogens. The SOCTIIP EIS/EIR identified impacts to biological resources, involving removal of natural habitats including, but not limited to, natural grasslands, coastal sage scrub, woodlands, riparian, wetlands, and chaparral. Impacts to sensitive, threatened, and endangered plant and wildlife species would also result from implementation of the SOCTIIP.

The evaluation of whether the Alton Parkway Extension Project, when combined with these projects, would result in a cumulative impact must consider whether the impacts would be to the same type of resources and whether there is sufficient proximity of the impacts so they would combine to result in a cumulative impact. The following provides a discussion of each of the impacts associated with the Alton Parkway project taking this, as well as the NCCP/HCP and project-specific mitigation program, into consideration.

Impact 3.7-1 identifies impacts to 8.7 acres of coastal sage scrub and the associated impacts to special status plant and wildlife species. As previously discussed, the NCCP was established to address both the project-related, as well as the cumulative impacts associated with this resource. This would be applicable to all the projects within the Central/Coastal NCCP. For those cumulative projects that are outside the Central/Coastal NCCP, mitigation programs have been established and implemented or mechanisms are in place to reduce impacts to coastal sage scrub to a less-than-significant level. For the Ranch Plan, this is being accomplished through the dedication of open space and implementation of the Adaptive Management Plan. SOCTIIP has pre-mitigated for coastal sage scrub impacts through the implementation of the Upper Chiquita mitigation site. Requirements of the NCCP also address site-specific impacts, such as use of native vegetation in proximity to the Reserve (Impact 3.7-8), sensitive lighting (Impact 3.7-9), and human intrusion into the Reserve (Impact 3.7-10). These provisions would also apply to other projects within the NCCP area, thereby addressing cumulative impacts. The cumulative projects outside the Central/Coastal NCCP area would not be in close enough proximity that lighting, landscaping, or human activities would contribute to cumulative impacts.

Impact 3.7-2 pertains to impacts to riparian vegetation and jurisdictional wetlands within the Borrego Canyon Wash. The Baker Ranch, Portola Hills South, City of Lake Forest Opportunities Study, and the James A. Musick Branch Jail Expansion are cumulative projects where wetland and riparian impacts in the Borrego Canyon Wash may result. However, impacts to wetlands for all the cumulative projects would be addressed through the permitting process (Section 1600 of the *Fish and Game Code* and Section 404 of the Clean Water Act). Implementation of permit requirements would ensure that there is no net loss of wetlands, thereby reducing the potential for cumulative significant impacts.

¹ Though some construction is still ongoing at Ladera Ranch, the mass grading and associated disturbance to habitat is complete. The EIR prepared for this project addressed the impacts associated with full buildout of all six lanes of Antonio Parkway across San Juan Creek. Construction has been phased and only a four-lane bridge has been built at this time. Widening or construction of a second bridge will occur at some point in the future.

Impact 3.7-3 identifies potential operational impacts (i.e., vehicle strikes) on the local western spadefoot toad population for the portion of the roadway adjacent to the Borrego Canyon Wash. Coordination with the NROC during design to incorporate design features which would allow movement of the toads and discourage crossing of the road would address these project-related impacts. The Baker Ranch and the City of Lake Forest Opportunities Study are cumulative projects in proximity to the Borrego Canyon Wash that would potentially affect the same population of toads. However, the development on the Baker Ranch and the Opportunities Study provides a larger buffer area between development and the Borrego Canyon Wash. No significant cumulative impacts are anticipated.

Impact 3.7-4 identifies a direct impact on the least Bell's vireo along the western reach of the project. No least Bell's vireo were identified along the eastern portion of the alignment within Baker Ranch. Additionally, there is limited habitat within Baker Ranch to support this species. Though, because of proximity, the same population would not be affected, the Crown Valley Parkway Bridge, the Ranch Plan, and SOCTIIP all have the potential to impact least Bell's vireo. Each project is required to implement measures to mitigate the impacts to less than significant. The Crown Valley Parkway Bridge project has implemented those measures, and post-construction surveys have determined that the least Bell's vireo population in the Arroyo Trabuco Creek was not affected by the project. Similar programs will be implemented for each of the other projects. No significant cumulative impacts are anticipated.

Impacts 3.7-5 through 3.7-7 identified the potential for impacts to sensitive species (burrowing owl, least Bell's vireo, and coastal California gnatcatcher) and raptors from construction activities. The Baker Ranch and James A. Musick Branch Jail Expansion are cumulative projects where there is the potential for cumulative impacts associated with concurrent development. The other cumulative projects would not be in close enough proximity that construction activities would result in cumulative adverse impacts. The overall disturbed nature of the Baker Ranch and Musick Facility would minimize the potential for impacts to a larger portion of the population. The impacts associated with combined noise would be addressed through the mitigation measure that requires a construction monitoring program be implemented to ensure that sensitive species would not be directly or indirectly impacted. The Biological Monitor would consider the project site conditions, which would evaluate the effect of both project and cumulative construction activities. No significant cumulative impacts are anticipated.

Cultural Resources

The Proposed Project has the potential to impact three known archaeological sites. The Proposed Project, combined with all the cumulative projects, would result in the disturbance of cultural resources in southeastern Orange County. However, each of these projects has been conditioned to provide grading monitoring and data recovery in accordance with City of Lake Forest, City of Irvine, and County of Orange Standard Conditions of Approval. While the archaeological sites would no longer remain in place, the impacts would be mitigated to a level of less than significant. The mitigation provides an opportunity to recover the remaining materials and add to the cultural/scientific database regarding earlier cultures in Orange County. These cumulative impacts would not be considered significant after mitigation.

Geophysical

The Proposed Project and the other projects within the cumulative project list would result in significant landform alteration. However, these impacts would be site-specific in nature and would be mitigated to less-than-significant levels through compliance with standard engineering and grading techniques. The Proposed Project and the other projects within the cumulative project list would also introduce more people and development to a seismically active area. These impacts

would be addressed, however, on an individual and cumulative basis by compliance with all applicable building codes.

Hazardous Materials

As stated in Section 3.10, although the Proposed Project would not introduce significant new sources of hazardous materials, the potential exists for both known and unknown hazardous materials to be encountered during construction activities. Should this occur, mitigation has been provided to effectively reduce any hazardous materials impact to a less-than-significant level. Additionally, this potential impact would be site-specific in nature; no cumulative impact would occur.

Hydrology and Water Quality

Cumulative effects related to hydrology resulting from implementation of the Proposed Project and development in the vicinity and surrounding areas may expose more persons and property to potential water hazards. Cumulative development may also adversely affect downstream water quality, resulting in impacts to surface and ground water supplies. Baker Ranch, the Musick Facility, the Great Park, the City of Lake Forest Opportunities Study, and the Northern Sphere would be in the same watershed as Alton Parkway. The potential cumulative impact is mitigated through implementation of appropriate on-site and off-site drainage improvements. Projects are also required to implement NPDES and BMP measures on a project-by-project basis to reduce potential water quality impacts. Therefore, no significant cumulative impacts would occur.

Land Use and Planning

Cumulatively, the projects within the cumulative project list would result in the conversion of undeveloped land to developed communities. However, each of the cumulative impacts either is or will be (in the case of the City of Lake Forest Opportunities Study, if approved) consistent with the appropriate local agency's general plan. Therefore, no cumulative impact would occur. It should also be noted that the Alton Parkway Extension Project has been anticipated in each local agency's general plan as a planned facility to accommodate traffic from the cumulative projects. It has also been incorporated into the Orange County MPAH to support planned land uses in the project study area. Because the Alton Parkway Extension Project does not add or modify any land uses, it would not contribute to a cumulatively significant land use impact.

Noise

Short-term noise impacts could occur during grading and construction activities associated with the Proposed Project and the other projects on the cumulative projects list. However, like the Proposed Project, each of the cumulative projects would either be conditioned to limit construction to the days and hours for which the County of Orange, the City of Irvine, and the City of Lake Forest noise ordinances grant or they would be granted a noise exemption. Therefore, short-term cumulative noise impacts would not occur.

With regard to future noise levels, all projects on the cumulative project list were included in the noise analysis prepared for the Alton Parkway Extension Project. As illustrated in Table 5-1, future (Year 2025) traffic noise resulting from operation of the Proposed Project and the other cumulative projects would be less than 60 dBA at the nearest sensitive receptor (the Musick Facility, which is located approximately 0.25 mile south of the proposed roadway alignment). This level of exterior noise is considered "Normally Acceptable" by the County of Orange and the cities of Irvine and Lake Forest. None of the other sensitive receptors in the project study area would be exposed to roadway noise levels above 60 dBA. Consequently, no cumulative noise impacts would occur.

**TABLE 5-1
FUTURE (2025) NOISE LEVEL CONTOURS**

Roadway Segment	Future (Year 2025)					Future (Year 2025) + Project					Change
	ADT	dBA @ 100 Feet from Roadway Centerline	Feet from Roadway Centerline to:			ADT	dBA @ 100 feet from Roadway Centerline	Feet from Roadway Centerline to:			
			60 CNEL	65 CNEL	70 CNEL			60 CNEL	65 CNEL	70 CNEL	
Alton Parkway											
Portola to SR-241	8,000	64.6	168	78	36	18,000	68.1	288	134	62	3.5
SR-241 to Rancho ^a	–	–	–	–	–	28,000	70.0	386	179	83	–
Rancho to Commercentre ^a	–	–	–	–	–	50,000	72.6	569	264	123	–
Commercentre to Irvine/ Trabuco ^a	–	–	–	–	–	50,000	72.6	569	264	123	–
Irvine/Trabuco to Toledo	24,000	69.4	349	162	75	39,000	71.5	482	224	104	2.1
Bake Parkway											
Portola to SR-241	29,000	70.9	395	184	85	23,000	69.9	339	157	73	-1.0
SR-241 to Commercentre	48,000	73.1	553	257	119	33,000	71.5	431	200	93	-1.6
Commercentre to Trabuco/ Irvine	55,000	73.7	606	281	131	37,000	72.0	465	216	100	-1.7
Irvine Boulevard/Trabuco Road											
West of Alton	53,000	72.8	591	274	127	61,000	73.4	641	301	140	0.6
Alton to Bake	69,000	74.0	705	327	152	55,000	73.0	606	281	131	-1.0
Bake to Lake Forest	31,000	70.5	413	192	89	27,000	69.9	377	175	81	-0.6
Portola Avenue											
West of Alton	22,000	69.7	329	153	71	20,000	69.3	309	143	67	-0.4
Alton to Bake	26,000	69.7	368	171	79	31,000	70.5	413	192	89	-0.8
Bake to Lake Forest	33,000	70.8	431	200	93	36,000	71.1	457	212	98	0.3
Rancho Street											
West of Bake	12,000	67.1	220	102	47	11,000	66.7	207	96	45	-0.4
^a For "No-project" conditions, Alton Parkway is not modeled between Irvine Boulevard/Trabuco Road and SR-241.											
Source: Modeled results calculated using the Federal Highway Administration's Highway Noise Prediction Model (FHWA RD-77-108) together with several roadway and site parameters.											

Public Services and Utilities

The Proposed Project, in addition to each project cumulatively considered, would create additional demand on public services and utilities. However, each of the projects has been required to provide mitigation for impacts to public services and utilities. These mitigation measures would apply to the cumulative effect upon public services and utilities, thereby reducing any impact to a less-than-significant level. Further, because the Proposed Project is a roadway extension, it would not have any adverse impacts on these services; therefore, it would not contribute to cumulative public service and utilities impacts.

Traffic

All the projects on the cumulative projects list were included in the traffic analysis for the Alton Parkway extension project. The Proposed Project was identified as part of the Foothill Corridor Phasing Plan and the Orange County MPAH as a critical missing link in the regional roadway network. The Proposed Project would not result in the generation of any new trips; rather it would accommodate existing trips in the project study area, thereby providing congestion relief. Consequently, the Proposed Project would not contribute to cumulative traffic impacts.